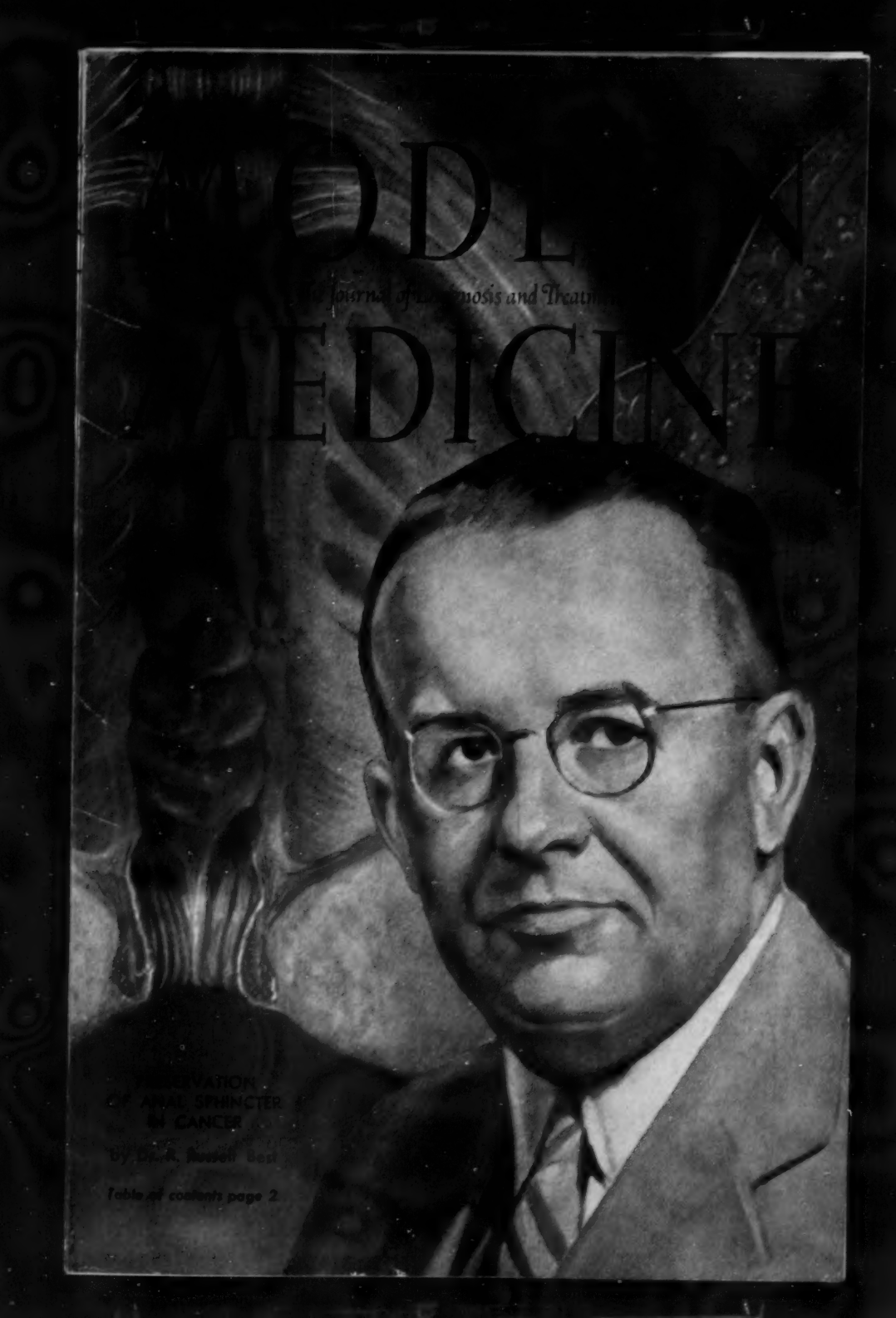
ODE
Journal of Diagnosis and Treatm
EDICINE
PRESERVATION
OF ANAL SPHINCTER
IN CANCER
By D. A. Russell Best
Table of contents page 2

Rx INFORMATION

TACE

INDICATIONS: Menopause, prostatic carcinoma, postpartum breast engorgement.

COMPOSITION: Each capsule, or 1 cc., contains 12 mg. of TACE (Chlorotrianisene).

SAFETY: TACE produces a minimal incidence of withdrawal bleeding so commonly observed following estrogen therapy of the menopause. In both sexes, TACE is generally well tolerated, thus minimizing such side effects as nausea, vomiting and fluid retention.

DOSAGE: For relief of menopausal symptoms, 2 TACE Capsules, or 2 cc. TACE Oral Drops (in cold water), daily for thirty days, is generally a course of therapy. In severe cases when symptoms recur, additional short courses of TACE may be required. For postpartum breast engorgement, 4 TACE Capsules daily for seven days. For palliative control of prostatic carcinoma, 1 or 2 TACE Capsules daily.

SUPPLIED: In bottles of 70 and 350 capsules; in 30 cc. bottles with calibrated dropper. One bottle of capsules or 2 bottles of oral drops usually suffice for a course of therapy.

References: 1. Greenblatt, R. B., and Brown, N. H.: Am. J. Obst. & Gyn. 63:140, June, 1952. 2. Ausman, D. C.: Wisconsin M. J. 53:322, 1954. 3. Woodhull, R. B.: Obst. & Gyn. 3:201, 1954. 4. Ivory, H. S.: J. Med. Soc. N. J. (In press).

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TACE... released like a hormonal secretion for your menopause patient

TACE, by virtue of its storage in body fat,[1] simulates the hormonal secretion of an endocrine gland by its gradual, even release from this depot.

TACE gives smooth, long-lasting control of symptoms[2]... minimal withdrawal bleeding[3]... and restoration of the "sense of belonging".[4]

A smoother adjustment to the menopause with a short, simple course of oral treatment.

TACE

ORAL "FAT-STORED ESTROGEN"

Merrell Since 1828

TACE[R]

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brand of nitrofurantoin, Eaton

for true economy in urinary tract infections

1. Fast clinical and bacteriologic cures.
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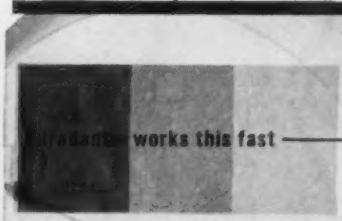

In 30 minutes: antibacterial concentrations in the urine.
In 24 hours: a turbid urine is frequently clear.
In 3 to 5 days: complete clearing of pus cells from the urine.
In 7 days: sterilization of the urine in the majority of cases.

Furadantin exerts powerful antibacterial action against a wide range of gram-positive and gram-negative organisms, including bacteria notorious for their resistance.

With Furadantin there is **no** proctitis...**no** pruritus ani...**no** crystalluria ...**no** moniliasis...**no** staphylococcic enteritis.

Average adult dose: Four 100 mg. tablets daily, taken with meals and with food or milk before retiring.

50 and 100 mg. tablets. Furadantin Oral Suspension, 5 mg. per cc.

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MODERN CONTENTS

Volume 23
Number 9

MODERN MEDICINE
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MEDICINE
for May 1, 1955

Walter C. Alvarez

Editor-in-Chief

•

THE MAN ON THE COVER is Dr. R. Russell Best of Omaha, Professor of Surgery and Assistant Professor of Anatomy at the University of Nebraska. Dr. Best is Branch Section Chief of General Surgery to the Veterans Administration and a staff member of Bishop Clarkson Memorial, Children's Memorial, Nebraska Methodist, and University of Nebraska hospitals. He is a fellow of the American College of Surgeons and a member of the American Surgical Association, Midwest Proctologic Society, and American Association of Anatomists. A report of a recent paper by Dr. Best, "Preservation of Anal Sphincter in Cancer," appears on page 107.

CONTINUED

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Contents for May 1 1955

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Contents for May 1 1955

Diamox*

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NOW ACCEPTED FOR USE IN

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Recent clinical trials show that DIAMOX suppresses both the frequency and severity of epileptic seizures. DIAMOX appears to produce a relative acidosis, in a manner similar to the ketogenic diet, and may also have a direct effect on nerve tissue. No direct sedative action is apparent.

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Oral administration of DIAMOX is followed by significant reduction in intraocular pressure in acute glaucoma. Experimental evidence indicates decreased secretion of aqueous humor. DIAMOX also appears to enhance the action of commonly employed miotics.

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Now the most widely prescribed drug of its type, DIAMOX has been immediately accepted by clinicians because it is an effective, safe and convenient *oral* diuretic.

Available in 250 mg. tablets and 500 mg. ampuls for intravenous use.

1. MERLIS, S.: Diamox: A Carbonic Anhydrase Inhibitor—Its Use in Epilepsy. Neurology. 4:11, 863-866 November 1954.

2. BECKER, B.: Decrease in Intraocular Pressure in Man by a Carbonic Anhydrase Inhibitor, Diamox. Am. J. Ophth. 37:1, 13-15 January 1954.

Lederle LEDERLE LABORATORIES DIVISION AMERICAN Cyanamid COMPANY
PEARL RIVER, NEW YORK

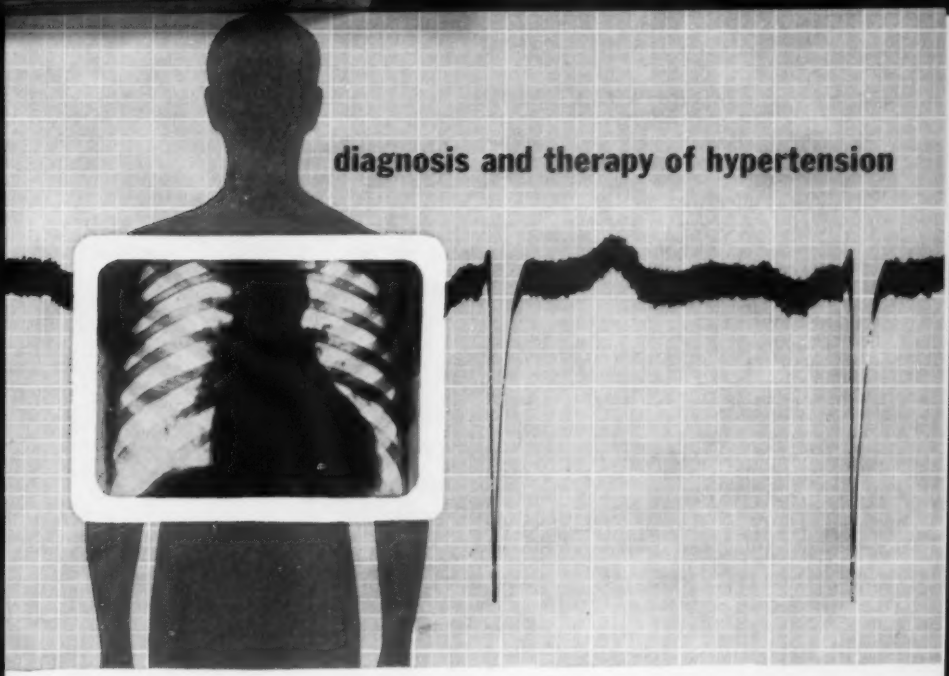
*REG. U.S. PAT. OFF.

MODERN MEDICINE

Therapeutic Index

for May 1, 1955

THIS INDEX, prepared for your convenience, lists all advertised products. Some products may be specifically indicated for more than one category, but space restricts listings to one category only. Details concerning the use of these products may be had by referring to pages listed, or by writing the manufacturer.



left ventricular hypertrophy

In the diagnosis of hypertension, left ventricular hypertrophy can be recognized by *two* commonly used devices: the fluoroscope for direct visualization of the enlargement and the electrocardiograph for tracings, deviations in which indicate the pathology.

In the therapy of hypertension, *two* agents may be used for better control and greater safety. Methium with Reserpine combines the potent ganglionic blocking action of hexamethonium with the mild hypotensive and sedative effects of reserpine. Synergism between these two agents permits effective blood pressure reduction "with less than half of the usual dosage requirements for Methium."[1] "...the combination appeared to be of practical value in that, with fewer side-effects, the blood pressure was held at lower levels with less fluctuation."[2]

Because of the potency of Methium, careful use is, nevertheless, required. Caution is indicated in the presence of renal, cardiac or cerebral arterial insufficiency. Markedly impaired renal function is usually a contraindication.

Supplied: *Methium* 125 *with Reserpine* – scored tablets containing 125 mg. of Methium and 0.125 mg. of reserpine. *Methium* 250 *with Reserpine* – scored tablets containing 250 mg. of Methium and 0.125 mg. of reserpine.

1. Crawley, C. J.; Silvis, G. M.; Stumpe, W. M., and White, L.: New York State J. Med. 54:2205 (Aug. 1) 1954.
2. Doyle, A. E., and Smirk, F. H.: Lancet 1:1096 (May 29) 1954.

Methium® with Reserpine

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(BRAND OF HEXAMETHONIUM CHLORIDE)

"a perfect match"

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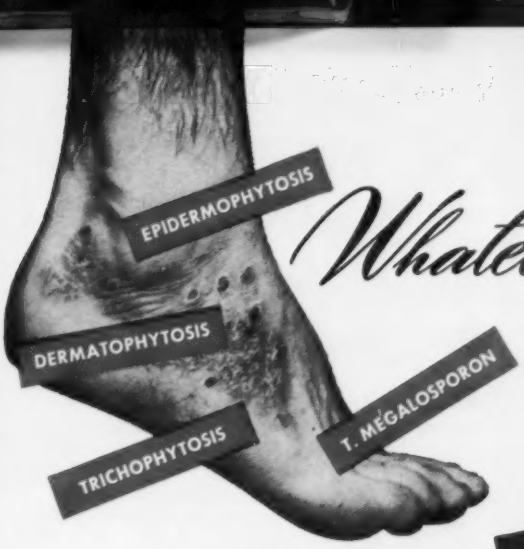
THERAPEUTIC INDEX



Whatever its name . . it's all the same to OCTOFEN®

You can get real scientific and diagnose it as trichophytosis or T. megalosporon. Or you may prefer the terms epidermophytosis, dermatophytosis, or one of several other fungal tongue-twisters. But whatever you call it – whatever its name, it adds up to just plain understandable *athlete's foot* with the telltale symptoms – itching, reddened, painful, broken-down skin, between the toes and on the feet; in unchecked cases, possible involvement of the hands, groins, thighs and other parts.

Fast Action with OCTOFEN LIQUID

Athlete's foot calls for *fast action* to prevent undue spreading and serious complications. That's why OCTOFEN LIQUID is becoming an increasing professional favorite in the treatment of this multi-named scourge. OCTOFEN LIQUID, containing the fungicide 8-hydroxyquinoline in effective concentrations, kills T. mentagrophytes (arch criminal in athlete's foot) *fast* – in 2-minutes by laboratory tests. Nipped in the bud with OCTOFEN LIQUID, early athlete's foot never gets a foothold; advanced cases often respond to treatment in as little as two weeks time. Clinical studies[1] reveal that OCTOFEN LIQUID is effective in more than 90% of all cases tried. Popular with your patients, OCTOFEN is kind to the tender infected skin, greaseless, non-staining, quick drying. No awkward wet dressings or packs required – just swab the affected parts generously at the office – treatment continued at home until relieved.

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1. Exp. Med. & Surg. 7:37, 1949.

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MODERN MEDICINE
THE JOURNAL OF DIAGNOSIS AND TREATMENT

Fewer recurrences in PSORIASIS

I=76% E=38% R=19%
with RIASOL

The most discouraging feature of psoriasis is recurrence. Ormsby and Montgomery* write: "The disease often recurs, and may do so repeatedly for the greater part of a lifetime."

Clinical investigation shows that in psoriasis treated with **RIASOL** recurrence is exceptional. In a series of resistant psoriatics, classified as therapeutic failures to other drugs, there was improvement with **RIASOL** in 76% of cases, eradication of the lesions in 38%, and recurrence in only 19%. Such recurrences responded readily to further treatment with **RIASOL.**

The explanation for these unusual results is to be found in the deep action of **RIASOL** in the prickle-cell layer of the stratum mucosum, from which the cutaneous lesions of psoriasis originate.

RIASOL contains 0.45% mercury chemically combined with soaps, 0.5% phenol and 0.75% cresol in a washable, non-staining, odorless vehicle.

Apply daily after a mild soap bath and thorough drying. A thin, invisible, economical film suffices. No bandages required. After one week, adjust to patient's progress.

RIASOL is supplied in 4 and 8 fld. oz. bottles at pharmacies or direct.

*Ormsby, O. S. & Montgomery, H., **Diseases of the Skin,** 6th ed., 1943, p. 291.

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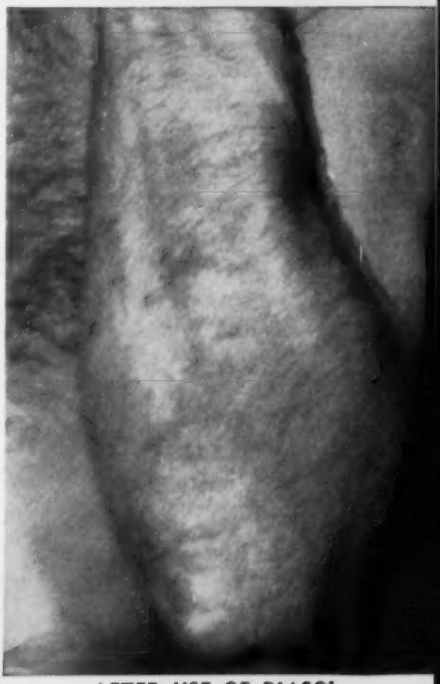
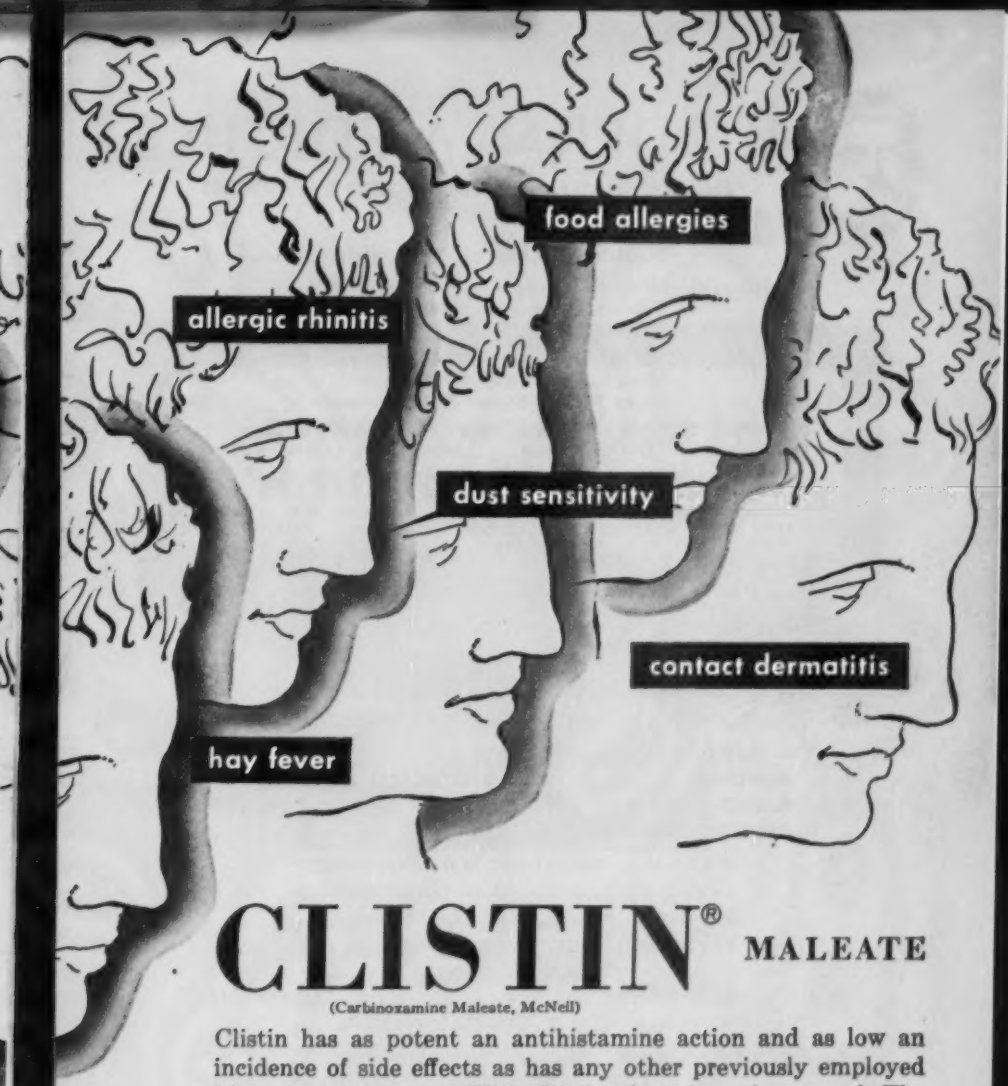
BEFORE USE OF RIASOL



AFTER USE OF RIASOL

RIASOL FOR PSORIASIS


drug allergies
urticaria



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Clistin has as potent an antihistamine action and as low an incidence of side effects as has any other previously employed histamine antagonist. With Clistin, drowsiness is unusual. The dosage is low—4 mg. gives most satisfactory clinical response.

Clistin is an innovation in antihistaminic compounds—why not try it on your next allergy case? Clinical samples available on request.

Tablets Clistin Maleate, 4 mg.
Tablets Clistin R-A (repeat action), 8 mg.
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Clistin Expectorant
Tablets Clistanal (Clistin Maleate, 2 mg. plus APC)

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MODERN MEDICINE

THE JOURNAL OF DIAGNOSIS AND TREATMENT

from an editorial in the J.A.M.A.
(156:991, Nov. 6, 1954):

Oral broad spectrum antibiotic therapy may cause infection with Candida albicans

A new concept in antibiotic therapy

antibacterial therapy
plus
antifungal prophylaxis
in one capsule

Each Mysteclin capsule, containing 250 milligrams of tetracycline hydrochloride and 250,000 units of nystatin, costs the patient only a few pennies more than does tetracycline alone.

Minimum adult dose: 1 capsule q.i.d.
Supply: Bottles of 12 and 100.

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antibacterial · antifungal

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Dexamyl* *tablets • elixir • Spansule† capsules*

Each 'Dexamyl' Tablet or teaspoonful (5 cc.) of the Elixir contains Dexedrine* Sulfate (dextro-amphetamine sulfate, S.K.F.), 5 mg.; and amobarbital, ½ gr.
Each 'Dexamyl' *Spansule* No. 1 contains the equivalent of *two* tablets; each 'Dexamyl' *Spansule* No. 2 contains the equivalent of *three* tablets.

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*T.M. Reg. U.S. Pat. Off.
†T.M. Reg. U.S. Pat. Off. for S.K.F.'s brand of sustained release capsules. Patent Applied For.

LETTER FROM THE EDITORS

Dear Reader:

One of the big stories in medicine broke on April 12 when the Francis report on the Salk vaccine was released. On page 73 of this issue, our Editor-in-Chief, Dr. Walter C. Alvarez, discusses the significance of the event. In our April 1, 1955 issue, Dr. Hart E. Van Riper of the National Foundation for Infantile Paralysis told of the plans for distributing the vaccine and vaccinating the school children of the first and second grades, should the Francis report be favorable. Those plans are now being implemented. Tens of millions of youngsters will be vaccinated this year.

This action, following immediately after the release of the report and licensing of manufacturers by the National Institutes of Health, was made possible by the wholehearted cooperation of the pharmaceutical industry. To have the vaccine ready, manufacturers had to make extensive and costly preparations months before, at a time when no one knew what the verdict would be. Even as late as April 11, Dr. Francis told reporters that he himself did not know what the report would say.

About three months are required to make and test the poliomyelitis vaccine. Unless production was started well ahead of the report, the vaccine in the needed quantities would not have been available much before the season that poliomyelitis incidence reaches its peak. Close cooperation between the medical profession, the National Foundation, public health officials, and the pharmaceutical industry has made possible another milestone in medicine. They gambled that the promise of the preliminary trials would be borne out. The result is a great stride in the conquest of paralytic poliomyelitis.

The Editors

Correspondence

Communications from the readers of MODERN MEDICINE *are always welcome. Address communications to The Editors,* MODERN MEDICINE, *84 South 10th St., Minneapolis 3, Minn.*

Short Anterior Flap

TO THE EDITORS: In your report of our paper on knee disarticulation *(Modern Medicine,* Jan. 15, 1955, p. 127), Figure A shows the measurement of the anterior flap being taken from the superior pole of the patella. This would result in too short an anterior flap and cause difficulty in obtaining adequate closure. The measurement should be made from the inferior pole of the patella.

COL. JOSEPH W. BATCH, M.C., U.S.A.
Fort Sam Houston, Tex.

Second-Side Hernia

TO THE EDITORS: I have enjoyed the two forum discussions on inguinal hernia *(Modern Medicine,* Oct. 1, 1954, p. 178; *Ibid.,* Jan. 15, 1955, p. 168).

The second-side inguinal hernia could be a topic for a future forum. This is the hernia that appears on the opposite side after the patient has had a successful repair on the first side. The incidence of this is greater than that of postoperative recurrence. The point raised is whether one should expose both inguinal canals at the first operation for hernia.

JAMES I. KNOTT, M.D.
San Diego

Upjohn

Gradual and sustained lowering of blood pressure:

Reserpoid

TRADEMARK FOR THE UPJOHN BRAND OF RESERPINE

(Pure crystalline alkaloid)

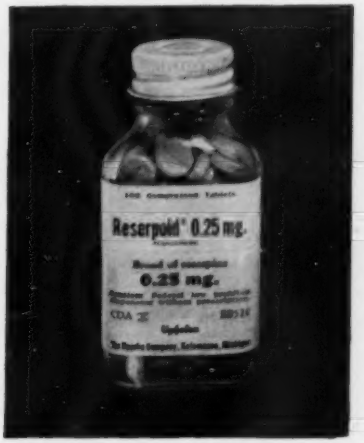
Each tablet contains:

Reserpine ..... 0.1 mg.
or 0.25 mg.
or 1.0 mg.

Supplied:

Scored tablets
0.1 and 0.25 mg. in bottles of 100 and 500
1.0 mg. in bottles of 100

The Upjohn Company, Kalamazoo, Michigan



Doctor-Patient Relationship

TO THE EDITORS: At times we meet with the saddening fact that doctors in hospitals do not exercise courteous, amiable, and sympathetic attitudes toward the patient. Everything is done by way of diagnostic and therapeutic measures but too often is done in a cold, detached manner.

In order to improve the doctor-patient relationship a program of training in the science of human relations should be started in the first year at medical school. The following outline is offered for a pattern for such a program:

- The psychologic fundamentals underlying general human relationships
- Nature of disease and the effect on psychologic make-up of the patient
- Personality changes, adjustments, and maladjustments of the sick
- Effective approach to the patient and his problems
- Insight of the physician into the patient's character, feelings, emotions, and reactions
- Knowledge by the physician of the patient's environment, his immediate family, and relatives

It goes without saying that this is a skeletal outline which can be broadened and enlarged upon according to the specific requirements of the medical school.

A similar program of courses, lectures, and seminars could be made available to the staff of any hospital. In the hospital area other

factors, such as cooperative effort, teamwork, and a friendly, courteous, and benign interrelationship among the physicians and the nonmedical personnel, could be included. Such policies will greatly affect the entire spirit of the hospital for the ultimate benefit of the patient.

JACOB S. GLENN, M.D.

Brooklyn

Medical Hair-Splitting

TO THE EDITORS: Accuracy of dosage and correct use of any drug or medication are essential to good medicine. But in all things, a modicum of common sense and practicality is needed.

Apply this to Dr. Ashton L. Welsh's insistence on the difference between zinc oxide and calamine (*Modern Medicine*, Feb. 1, 1955, p. 22). Using the U.S.P. formula for calamine lotion as an example, one can make up 3 solutions, one with 160 gm. of zinc oxide, one containing 80 gm. of both zinc oxide and calamine, and one with 160 gm. of calamine. The amount of zinc oxide in the 3 solutions varies about 0.2%!

The average pharmacist using the usual equipment cannot even compound a prescription to that degree of accuracy. I've tried to myself, using reagent scales and chemical agents, in advanced chemistry work. It can be done but not by me or

(Continued on page 29)

power-packed performer

TRINSICON

(HEMATINIC CONCENTRATE WITH INTRINSIC FACTOR, LILLY)

TWO A DAY FOR ALL TREATABLE ANEMIAS

POTENT FORMULA

Two Pulvules 'Trinsicon' provide:

Special Liver-Stomach Concentrate, Lilly (containing Intrinsic Factor).....300 mg. Vitamin B_{12} with Intrinsic Factor Concentrate, U.S.P.....1 U.S.P. unit (oral) Vitamin B_{12} (Activity Equivalent).....15 mcg.	These three ingredients are clinically equivalent to **1½ U.S.P. units** of APA potency.
Ferrous Sulfate, Anhydrous.....600 mg.	Equal to over **1 Gm.** Ferrous Sulfate, U.S.P.
Ascorbic Acid.....150 mg.	
Folic Acid.....2 mg.	

Note: Special Liver-Stomach Concentrate, Lilly, supplies, in addition to intrinsic factor, natural compounds that add the broad nutritional support so important in all types of anemia.

CONVENIENT—Therapeutic quantities of all known factors are provided in only two pulvules daily—the ideal dosage in most anemias.

ECONOMICAL—The cost of combined therapy with 'Trinsicon' is less than half what it was in 1950.

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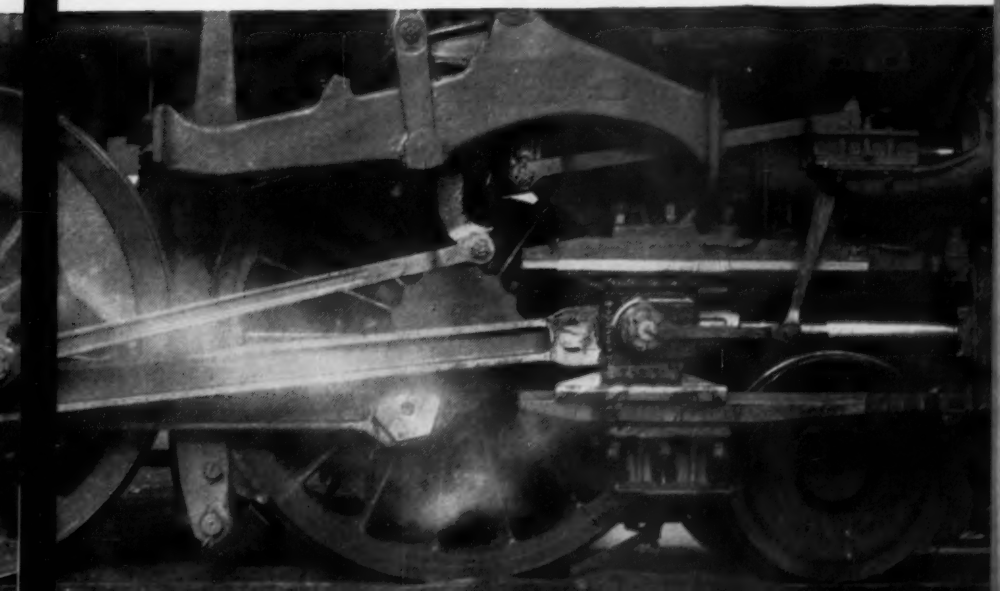


'For many years the natives of the Dutch Indies have used the squeezed juice of the Curcuma in the treatment of diseases of the liver'

Gallogen

Gallogen (gal-o-jen) is the Massengill name for the synthesized active principle of the ancient drug Curcuma. The isolation and synthesis of the active principle permits the administration of a pure, standardized form of the drug. Gallogen is a true choleretic, not a bile salt.

Gallogen acts directly on the hepatic cells. It stimulates the flow of bile which is whole in volume and composition. The choleresis is in proportion to the functional capacity of the liver and is prompt and lasting.

Gallogen is indicated whenever it is desirable to increase the flow of bile, encourage activity of the gallbladder and promote normal function of the biliary system.

send for professional literature and sample

Supply: in bottles of 100 and 1000 tablets containing 75 mg. of the diethanolamine salt of the mono-d-camphoric acid ester of p-tolylmethyl carbinol.

THE S. E. MASSENGILL COMPANY, Bristol, Tennessee

any average pharmacist. The whole subject is then *reductio ad absurdum*, as is so much medical hair-splitting.

A. W. WHITE, JR., M.D.
Houston

More on Thumbsucking

TO THE EDITORS: When the thumb is continuously sucked, a vacuum or at least an area of diminished pressure is created in the oral cavity. Toward this area, to the extent made possible by their motility, all the pharyngeal and retronasal formations are inevitably attracted, including the soft palate, tonsils, pillars, and lymphoid masses. This obviously leaves more room for the air stream to go through from nose to larynx and vice versa.

Thumbsucking, therefore, is a subsidiary respiratory mechanism which suppresses completely mouth breathing and increases the efficiency of nasal breathing. As such, it may have its justification and, possibly, even its merits in particular circumstances.

TULLIO M. BALBONI, M.D.
San Pedro, Calif.

Safety in Steam Inhalations

TO THE EDITORS: In the correspondence section of the March 15, 1955 issue of *Modern Medicine* (p. 27), an editor's note on steam inhalations states that "the source of steam and the method of its delivery are of secondary importance." The physician should be careful to stress just the opposite of this statement.

The Children's Orthopedic Hos-

pital of Seattle has more than one patient undergoing prolonged and expensive treatment for permanently disfiguring and life-endangering burns suffered from various methods of steam vaporization, including in some cases commercial vaporizers.

The younger the child, the more important are the precautions. Basic measures include [1] never placing hot water or a source of heat as high as the child's bed unless the water is not hot enough to burn; and [2] never placing a hot plate or other electric source of heat near the child's bedclothes and preferably not in the same room as an unattended child.

L. F. TURNBULL, M.D.

Seattle

Immunity to Allergy

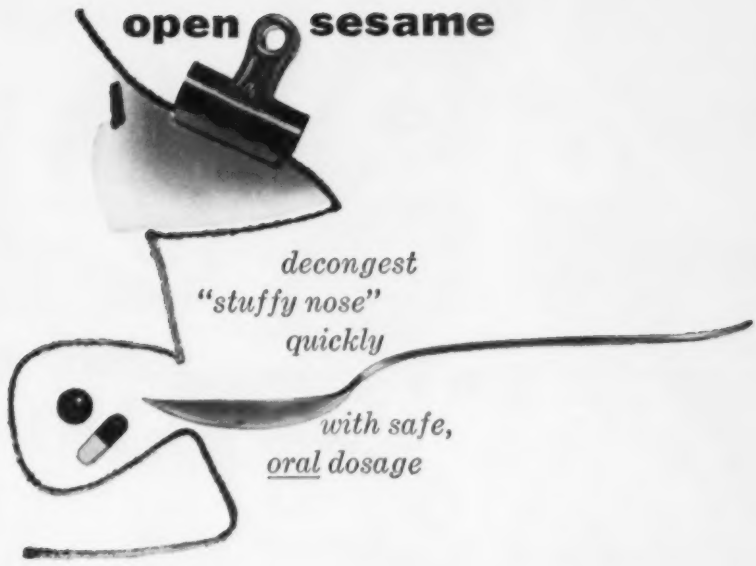
TO THE EDITORS: The editorial on the early feeding of solids to infants (*Modern Medicine*, Feb. 15, 1955, p. 81) inspires the following:

We have 4 children. The third child nursed almost exclusively on breast milk until he was about 8 months of age. None of the other 3 children nursed nearly this long. The third child is the only one who has shown any tendency to asthma, and he has had severe asthmatic attacks. His mother has no allergies of note, although milk apparently bothers her a little.

In this case at least, it would not seem that breast nursing gives immunity to allergy.

M. E. SMITH, M.D.

Tampa



Novahistine®

ELIXIR / TABLETS / FORTIS CAPSULES

Oral use of this synergistic combination of vasoconstrictor and antihistamine takes the "sting" out of decongestion... eliminates risks of improperly used topical agents. And, Novahistine causes no jitters, insomnia, or drug tolerance.

Each Novahistine Tablet, or teaspoonful of Elixir, provides 5.0 mg. phenylephrine hydrochloride and 12.5 mg. prophenpyridamine maleate. In NOVAHISTINE *Fortis* Capsules the phenylephrine content is doubled, for patients needing greater vasoconstrictive effect.

PITMAN · MOORE COMPANY
DIVISION OF ALLIED LABORATORIES
INDIANAPOLIS, INDIANA

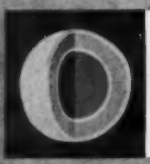
"Good Response"* in

in psoriasis 79%

of cases treated with Entozyme alone

After using digestive enzyme replacement with ENTOZYME 'Robins' as the only therapy in a series of 24 psoriasis patients "recalcitrant to all previous treatment," Ingals* reports that "good response occurred in 19 cases [79%] within four weeks to three months . . . complete clearing in four cases."

Entozyme provides pancreatic enzymes to help restore normal metabolism, so commonly disordered in the psoriatic . . . and thus represents an effective systemic approach to successful therapy.



Each Entozyme 'tablet-within-a-tablet' contains:

—in its gastric-soluble outer coating . Pepsin, N.F. 250 mg

—in its enteric-coated core . . { Pancreatin, U.S.P. 300 mg. / Bile salts 150 mg.

* Ingals, A. H.: California Medicine 79:427, 1953.

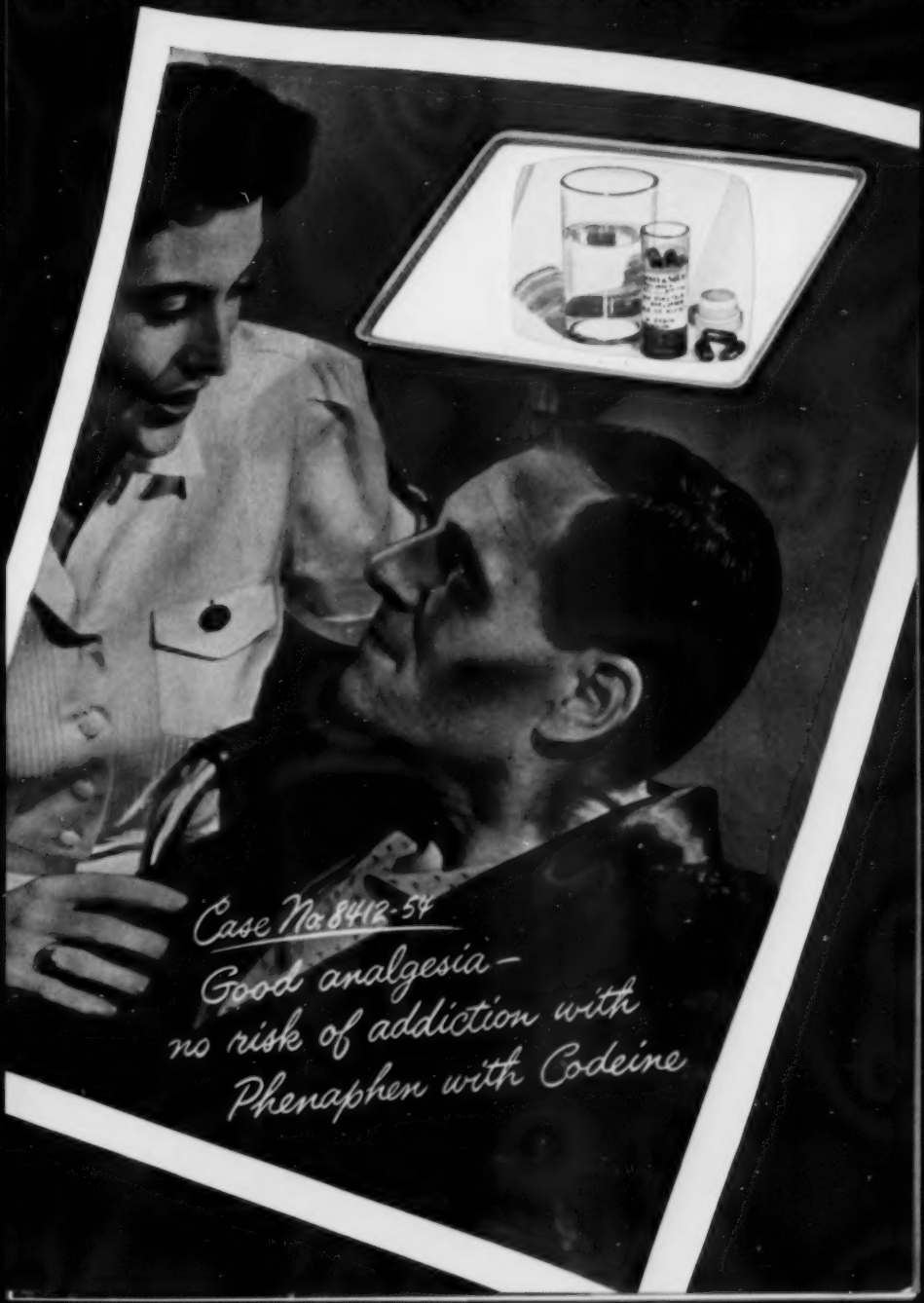
ENTOZYME®

Robins

A. H. ROBINS CO., INC. · RICHMOND 20, VIRGINIA

Ethical Pharmaceuticals of Merit since 1878

AS FROM A PHYSICIAN'S ALBUM OF PRESCRIPTION SUCCESSES



Maximum safe

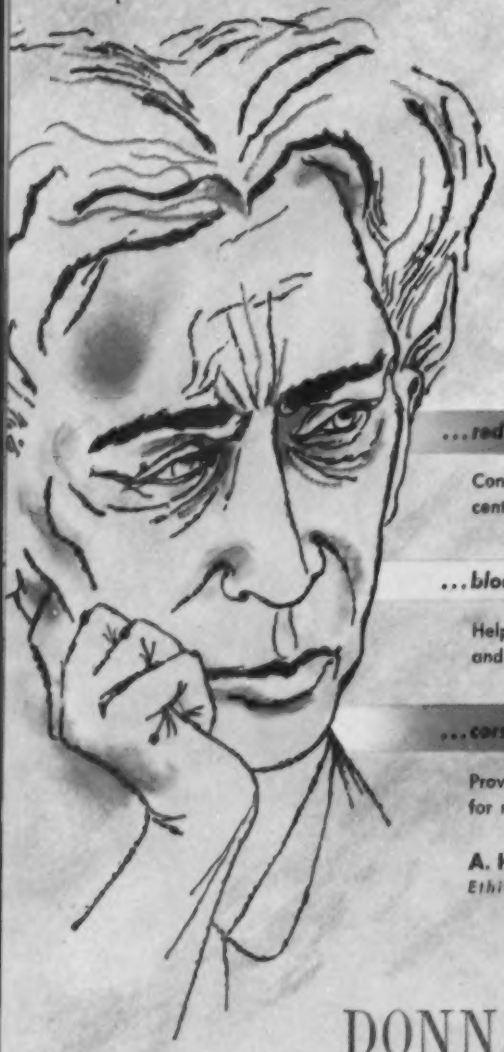
even in severe pain...

By the synergism of codeine phosphate with the ingredients of the Phenaphen formula, analgesic action is so enhanced that even the pain of late cancer is satisfactorily controlled in many cases. This maximum *safe* analgesia avoids the addiction hazard of morphine or of synthetic narcotics.

PHENAPHEN®
with **CODEINE**

A. H. Robins Co., Inc., Richmond 20, Va.
Ethical Pharmaceuticals of Merit since 1878


analgesia–
the prescription behind the clinical success
Rx
Four analgesic potencies to meet individual requirements
PHENAPHEN®
(basic non-narcotic formula)
Acetylsalicylic acid 162 mg. (2½ gr.)
Phenacetin ..... 194 mg. (3 gr.)
Phenobarbital ..... 16.2 mg. (¼ gr.)
Hyoscyamine sulfate 0.031 mg. 1/2000 gr.
(Brown and white capsules)
PHENAPHEN® with CODEINE PHOSPHATE
½ GR. (16.2 mg.)
(PHENAPHEN NO. 2)
(Black and yellow capsules)
PHENAPHEN® with CODEINE PHOSPHATE
½ GR. (32.4 mg.)
(PHENAPHEN NO. 3)
(Black and green capsules)
PHENAPHEN® with CODEINE PHOSPHATE
1 GR. (64.8 mg.)
(PHENAPHEN NO. 4)
(Green and white capsules)
new



FOR THE CHRONIC FATIGUE SYNDROME

Donnatal Plus

provides triple action

...reduces emotional hyperactivity

Controls cerebrogenic overactivation of autonomic centers by mild sedation.

...blocks parasympathetic over-stimulation

Helps prevent hyperinsulinism and hypoglycemia, and protects alimentary tract from hypermotility.

...corrects common nutritional deficiencies

Provides important B-complex vitamins essential for normal carbohydrate metabolism.

A. H. ROBINS CO., INC. • Richmond 20, Va.
Ethical Pharmaceuticals of Merit since 1878

DONNATAL® PLUS

Robins

(Donnatal with B Complex)

Each Tablet or 5 cc. teaspoonful of Elixir provides:

Hyoscyamine sulfate	0.1037 mg.	Riboflavin	2.0 mg.
Atropine sulfate	0.0194 mg.	Niacinamide	10.0 mg.
Hyoscine hydrobromide	0.0065 mg.	Pantothenic acid	2.0 mg.
Phenobarbital (¼ gr.)	16.2 mg.	Pyridoxine hydrochloride	0.5 mg.
Thiamine	3.0 mg.		

Questions & Answers

All questions received will be answered by letter directed to the petitioner; questions chosen for publication will appear with the physician's name deleted. Address all inquiries to the Editorial Department, MODERN MEDICINE, *84 South Tenth Street, Minneapolis 3, Minnesota.*

Lactosuria During Pregnancy

QUESTION: A young woman, pregnant for the first time, suddenly has reducing sugar in the urine in the seventh month of gestation. Repeated tests show 2 to 4+ Benedict reaction in all specimens. The diabetic curve ranges from 105 to 184 mg. How should this case be managed? Will the child require any special treatment?

M.D., Illinois

ANSWER: *By Consultant in Diabetes.* Lactosuria is common in the later months of pregnancy. The reducing substance should be differentiated as glucose or lactose, because lactosuria may occur without glycosuria. If the reducing substance is lactose, no further tests are necessary; if glucose, a glucose tolerance test is advisable.

When a glucose tolerance test shows a curve such as the one seen in this case, the patient has mild diabetes. A diet consisting of approximately 200 gm. of carbohydrate and 80 to 90 gm. of protein, with the remainder of the caloric value made up of fats, should be begun. Caloric value is determined by the normal weight and height of the patient. If, after a reasonable time with diet alone, the postprandial blood sugar remains above 180 mg. with urinary excretion of sugar, insulin is indicated. Dosage is determined by sugar excretion and height of the blood sugars.

No special treatment for the baby is necessary except to determine the blood glucose at birth. If the mother is diabetic, urinalyses should be done on all future children.

Cause of Diabetes

QUESTION: I have a 20-year-old male patient with severe diabetes. Family history for the condition is negative. At the age of 13, the patient was operated on for undescended testis. Before surgery was done, he had received large amounts of anterior pituitary hormone without benefit. Could diabetes result from the anterior pituitary hormone injections? Can pituitary diabetes be distinguished from insufficiency of the islets of Langerhans?

M.D., New York

ANSWER: *By Consultant in Diabetes.* No definite connection has been found between diabetes and anterior pituitary hormone injections, but tests on animals suggest that administration of a crude anterior pituitary extract containing ACTH may increase the amount of sugar in the blood. Permanent diabetes

(Continued on page 36)

physiologic answer to "morning sickness"

EMETROL®

Phosphorated Carbohydrate Solution

In a controlled study, Crunden and Davis[1] clearly established the value of EMETROL in nausea and vomiting of pregnancy. EMETROL produced favorable responses in 78.8 per cent of 123 patients, as compared with only 14.8 per cent of 122 patients receiving a placebo of like appearance and taste. Relief was usually secured within the first 24 hours of treatment. EMETROL was found to be a *safe, physiologic* agent, free of annoying side actions. Containing no drugs likely to induce untoward effects, EMETROL is easy and pleasant to take, safe for all age groups.[2,3]

DOSAGE: 1 to 2 tablespoonfuls on arising, repeated every three hours or whenever nausea threatens.

IMPORTANT: EMETROL must always be taken *undiluted.* Fluids should not be allowed for at least 15 minutes after each dose.

SUPPLIED: In bottles of 3 fl.oz. and 16 fl.oz. through all pharmacies.

In epidemic vomiting (acute infectious gastroenteritis, intestinal "flu"), EMETROL works rapidly, even in refractory cases; control is usually established with the first few doses, "often with a single dose."[2]

1. Crunden, A. B., Jr., and Davis, W. A.: Am. J. Obst. & Gynec. 65:511, 1953. 2. Bradley, J. E., et al.: J. Pediat. 38:41, 1951. 3. Tebrock, H. E., and Fisher, M. M.: M. Times 82:271, 1954.

Kinney

Literature and sample on request

KINNEY & COMPANY, INC.
COLUMBUS, INDIANA

may be produced by the hormone by causing irreversible damage to the islets of Langerhans. Pituitary diabetes and diabetes due to insufficiency of the islets of Langerhans cannot be differentiated.

Epilepsy

QUESTION: Is epilepsy hereditary? Should an epileptic person who has infrequent attacks be advised not to marry?

M.D., Massachusetts

ANSWER: *By Consultant in Neurology.* The only type of epilepsy which is probably hereditary is characterized by petit mal seizures and bilateral synchronous 3-per-second wave discharges on the electroencephalogram. In instances of symptomatic epilepsy secondary to brain injury or infection, the tendency to inherit the condition is slight and not a barrier to marriage.

Arthritic Changes

QUESTION: An elderly man in good health has a tingling sensation with heat, stiffness, and numbness of the fingers. What is the cause? What is the recommended therapy?

M.D., Ohio

ANSWER: *By Consultant in Neurology.* This patient probably has a considerable degree of arthritic alteration involving the foramina in the cervical region. In such instances, lengthening of the vertebra with stretching of the rootlets during the night or when at rest produces these pathologic changes.

No specific therapy is known. Intramuscular vitamin B_{12}, in doses of 1,000 μg. every other day, or Benadryl, 25 mg. three times a day, may be tried.

the long and short of Bentyl's relief of nervous gut

Clinicians[1,2] prove Bentyl is long on effective relief... short on unwanted side effects including blurred vision and dry mouth.

1. Mahaney and Browne: Soc. Med. J. 46:1139, 1953.
2. Lorber and Shay: Fed. Proc. 13:99, 1954.

Complete Bentyl bibliography on request.

BENTYL
(Dicyclomine Hydrochloride)

another exclusive development of Merrell research

Merrell
Since 1828

For initial therapy—in all cases:

SERPASIL, a pure crystalline alkaloid of rauwolfia root—particularly effective in the neurogenic forms of hypertension. *Acts centrally*—tranquilizes, moderately lowers blood pressure, slows heart rate.

Serpasil®

When combination therapy is indicated:

SERPASIL-APRESOLINE, a combination product offering convenience and economy in the more complicated cases involving both neurogenic and humoral factors.

Serpasil®-Apresoline®

In more refractory cases requiring further individualization of dosage:

APRESOLINE *acts centrally and peripherally* for a marked antihypertensive effect. Increases renal plasma flow—produces vasodilatation—inhibits pressor substances.

Apresoline®

Serpasil	Tablets, 0.1 mg., 0.25 mg. and 1.0 mg. Parenteral Solution (for neuropsychiatric use only), 2.5 mg. per ml., in 2-ml. ampuls. Elixir, 0.2 mg. per 4-ml. teaspoonful.
Serpasil-Apresoline	Tablets, each containing 0.1 mg. of Serpasil and 25 mg. of Apresoline. Tablets, each containing 0.2 mg. of Serpasil and 50 mg. of Apresoline.
Apresoline	Tablets, 10 mg., 25 mg., 50 mg. and 100 mg. Ampuls, 1 ml., 20 mg. per ml.

CIBA

SUMMIT, N. J.

Forensic Medicine

ARTHUR L. H. STREET, LL.B.

Prepared especially for Modern Medicine

Hospital—*Recognition*

PROBLEM: A clinic, supervised by a licensed physician, had an operating room and facilities for overnight patients. Was it a hospital within the meaning of a hospitalization policy, though a registered nurse was not always on duty?

COURT'S ANSWER: *Yes.*

The Louisiana Court of Appeal, Second Circuit, mentioned that many insurance companies had recognized the particular clinic as a hospital (76 So. 2d 630).

Expert Testimony—*Homicide*

PROBLEM: It was settled at a murder trial that if accused accidentally shot his wife in their house he carried her outside, where a doctor quickly attended her, but that if he murdered her, she ran out of the house. The doctor and another physician testified that examination of the wound revealed that no major blood vessel had been severed; it was their opinion that decedent could have walked or run out of the house before she collapsed. Did the testimony support a conviction?

COURT'S ANSWER: *Yes.*

The Louisiana Supreme Court noted that the doctors' opinion was based on an undisputed fact (76 So. 2d 543).

to be "Nosegay"

Tyzine*

brand of tetrahydrozoline hydrochloride

new standard for nasal decongestion

supplied: As Nasal Spray in 1-oz. plastic bottles containing 15 cc. of an 0.1% aqueous solution. As Nasal Solution in 1-oz. bottles, 0.1%.

Odorless and tasteless, ***Tyzine*** quickly restores taste and odor perception with new breathing ease.

Free of sting or burn. No rebound congestion or other local reactions. ***Tyzine*** *provides...*

nasal patency in minutes for hours

Pfizer

PFIZER LABORATORIES Division, Chas. Pfizer & Co., Inc. Brooklyn 6, New York

Witnesses—*Medical Experts*

PROBLEM: A 59-year-old worker sustained an unidentified back injury while lifting a heavy object and died three weeks later. At a workmen's compensation hearing, an orthopedic surgeon testified that the worker was in a lethargic condition when hospitalized three days before death and became semicomatose the day before death. Laboratory findings showed a reduced red blood count and hemoglobin and a trace of albumin in the urine. The death certificate stated that primary cause of death was not known but possibly was generalized malignancy. The surgeon did not think the back injury caused death. Was the testimony sufficient to deny workmen's compensation in favor of the widow?

COURT'S ANSWER: *Yes.*

The Kentucky Court of Appeals admitted that when death occurs soon after injury to an able-bodied person, the injury is generally the presumed cause of death in the absence of contrary proof. However, in this case, the doctor's testimony overcame the presumption (272 S.W. 2d 471).

Homicide—*Cause of Death*

PROBLEM: A man who had been shot died of massive pulmonary embolism attributable either to the gunshot wound or to a therapeutic procedure. Could the assailant be convicted?

COURT'S ANSWER: *Yes.*

The Delaware Supreme Court said that though embolism occurred after skin grafting necessitated by the injury, death was attributable to the gun wound (110 Atl. 2d 445).

Why BROMIDIA WORKS IN OBSTINATE INSOMNIA

Bromidia combines chloral hydrate for quick soporific effect with potassium bromide and ext. hyoscyamus to prolong sleep. This combination provides an 8-hour span of restful slumber.

Of chloral hydrate the *United States Dispensatory** writes: "For the relief of insomnia not caused by pain it is one of the most certain hypnotics which we possess. It merits wider use . . . It is useful in the more obstinate forms of sleeplessness such as in delirium tremens and certain types of insanity. Its action is very prompt, sleep generally beginning within fifteen minutes or half an hour after its oral administration. The effects, however, do not usually last over three or four hours."

For severe insomnia accompanying fevers, other acute illnesses and mental disturbances, prescribe Bromidia with confidence. The formula of Bromidia contains chloral hydrate 91 gr., potassium bromide 91 gr. and ext. hyoscyamus 1 gr. per fld. oz. The 4-hour chloral hydrate span is doubled by combination with potassium bromide in Bromidia.

Prescribe 1 to 2 teaspoonfuls of Bromidia on retiring to give your harassed patient a good night's sleep. As a sedative for relief of nervous tension, the dosage is 1/2 to 1 teaspoonful repeated up to three times daily. Maximum dosage 3 teaspoonfuls daily.

Bromidia is available on prescription in 4 fld. oz. and 1 pint bottles.

*United States Dispensatory, 24th ed., 1947, p. 259.

Bromidia *When Sleep is Needed*

BATTLE & COMPANY 4026-28 OLIVE STREET, ST. LOUIS 8, MISSOURI

Manufacturers of High Grade Pharmaceuticals

MAIL COUPON TODAY — Test BROMIDIA YOURSELF

BATTLE & COMPANY
4026 Olive Street, St. Louis 8, Missouri.

Please send me professional literature and sample of BROMIDIA.

.....M.D.

ADDRESS.....

CITY.....ZONE.....STATE.....

A really new prenatal supplement

new because—

- ***chelated iron***...for exceptional tolerance
- ***phosphorus-free calcium***...for freedom from leg cramps
- plus 10 other essential metabolites important in pregnancy

Chelated iron...better tolerance...iron is not suddenly imposed on the duodenum and upper jejunum... hence, no irritation...***better uptake*** ...iron is available over an extended area of the gastrointestinal tract.

Phosphorus-free calcium...avoids the neuromuscular complaints attributed to phosphorus-containing calcium supplements.

Ferrolip OB dosage is small. Just 1 tablet t.i.d. provides:

Ferrolip* (Iron Choline Citrate)	150 mg.
Tricalcium Citrate	600 mg.
Calcium Gluconate	300 mg.
Thiamine Mononitrate	3 mg.
Riboflavin	3 mg.
Niacinamide	30 mg.
Calcium Pantothenate	10 mg.
Pyridoxine Hydrochloride	10 mg.
Ascorbic Acid	200 mg.
Folic Acid	0.5 mg.
Vitamin B_{12} with Intrinsic Factor Concentrate	1 U.S.P. Unit (Oral)
Vitamin A	5000 Units
Vitamin D	500 Units

*Protected by U.S. Patent 2,575,611. — Bottles of 60 and 1000 tablets.

FLINT, EATON & CO. • DECATUR, ILLINOIS

FERROLIP® OB

Insurance—*Hospitalization*

PROBLEM: A hospital benefit policy excluded coverage of nervous and mental disorders. Insured was confined and treated at a clinic for an acute skin eruption caused by a neurologic disorder. Did the policy cover?

COURT'S ANSWER: *Yes.*

The Louisiana Court of Appeal, Second Circuit, noted that not a nervous disorder but a result of it was treated (76 So. 2d 630).

The court cited a decision of the Louisiana Supreme Court regarding a policy that excluded coverage for disability from diseases not common to both sexes. Benefits were allowed when cancer originated in the ovary of the insured and spread to the omentum and abdomen (207 La. 758, 22 So. 2d 55, 56).

Defamation—*Of Physicians*

PROBLEMS: [1] Defendant allegedly said that a physician was mentally unbalanced, was wanted for arrest, would not be able to practice if he returned to the state, and had abandoned his wife and child. Was this slander that warranted award of damages without proof of actual damage? [2] Was the statement that the doctor was ill, had had three-fourths of his stomach removed, and was "pretty far gone" slanderous in itself?

COURT'S ANSWERS: [1] *Yes.* [2] *No.*

The Supreme Court, New York County, N.Y., said that the first accusations would injure the doctor's professional reputation. References to his physical condition did not support a damage award unless injury to his practice was proved (137 N.Y. Supp. 2d 131).

"You would get him started on his operation again!"

even when other therapy fails

in
eczemas
dermatoses
ulcers
burns
pruritus (ani et vaivae)
slow healing wounds
diaper rash
chafing
etc.

panthoderm cream

relieves pain and itching, stimulates healing

CLINICALLY EFFECTIVE — Panthoderm Cream quickly and definitely relieved itch, often where "all other measures failed." In various ulcerative and pyogenic skin conditions a "majority healed and many showed various degrees of improvement." Even long-standing conditions resistant to other therapy seem to respond to Panthoderm Cream.

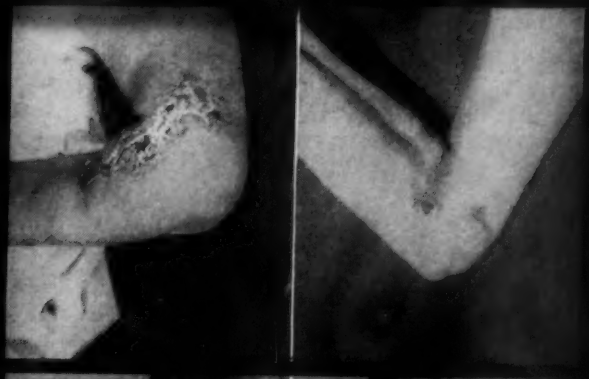
no evidence of sensitization, non-irritant

Recent published reports on Panthoderm Cream.

1. Kline, P. R., and Caldwell, A.: New York St. J. M. 52:1141, 1952.
2. Schoch, H. G.: The Schoch Letter, May 1952.
3. Welch, A. L. and Ede, M.: A.M.A. Archives Derm. & Syph., June 1954.
4. Boggan, W. H. and Labecki, T. D.: Clin. Med., May 1954.
5. Kline, P. R.: Current News in Derm. & Syph., May 1952.

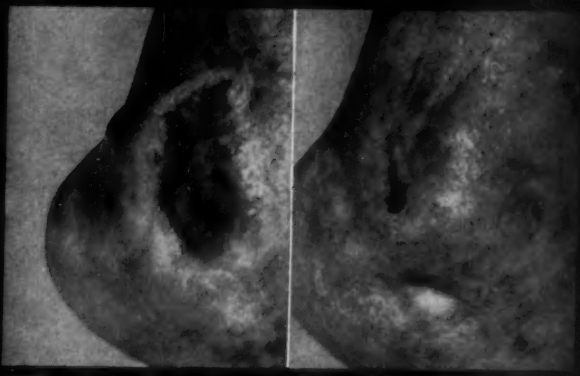
in 2 oz. and 1 lb. jars; 1 oz. tubes
samples upon request

u. s. vitamin corporation
(Arlington-Funk Laboratories, division) • 250 East 43rd Street, New York 17, N.Y.



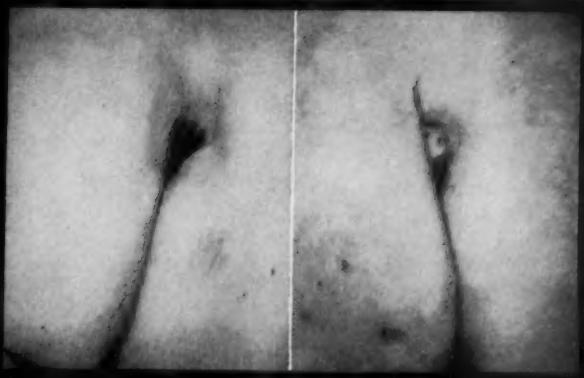
left
Traumatic ulceration with edema in a paralyzed arm

right
Almost complete healing with Panthoderm Cream applied twice daily, covered with sterile gauze, for three weeks



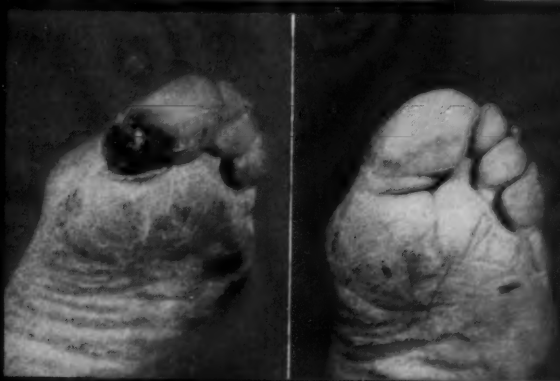
left
Varicose ulcer of ankle, large, deep, profuse foul-smelling discharge

right
Healing of ulcer after treatment with Panthoderm Cream for ten weeks



left
Gangrenous ulcer of the buttocks

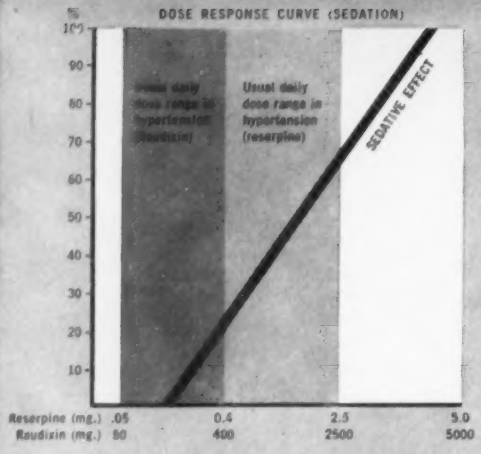
right
Healing after twice daily application of Panthoderm Cream for four weeks



left
Diabetic ulceration of great toe of two months' duration; unresponsive to previous therapy

right
Complete healing after two weeks therapy with Panthoderm Cream applied every eight hours

Why Raudixin is safer than reserpine for the treatment of hypertension



Note that the sedative effect of Raudixin in the usual daily dose range in hypertension is far less than that of reserpine. This explains why Raudixin is much less likely than reserpine to cause excessive sedation and depression.
At the usual daily dose, the hypotensive effect of Raudixin and reserpine is substantially the same.

For this reason, the safer drug --- **RAUDIXIN** is the drug of choice in hypertension.

The usual initial dose of Raudixin is 100 mg. b.i.d. This may be gradually increased or decreased as needed.

Supply: 50 and 100 mg. tablets, bottles of 100 and 1000.

R A U D I X I N

SQUIBB WHOLE ROOT RAUWOLFIA

SQUIBB

"RAUDIXIN"© IS A SQUIBB TRADEMARK

there is nothing quite like

DESITIN®

OINTMENT

rich in
COD LIVER OIL

to keep baby's skin clear, smooth, supple, free from rash, excoriation and chafing

Desitin Ointment has proven its soothing, protective, healing qualities[1-4] in over 30 years of use on millions of infants in . . .

DIAPER RASH · DERMATITIS · INTERTRIGO · IRRITATION

FOR *samples* AND LITERATURE PLEASE WRITE...

Tubes of 1 oz., 2 oz., 4 oz., and 1 lb. jars.

DESITIN CHEMICAL COMPANY
70 Ship Street • Providence 2, R. I.

1. Grayzel, H. G., Helmer, C. B., and Grayzel, R. W.: New York St. J. M. 53:2233, 1953.
2. Helmer, C. B., Grayzel, H. G., and Kramer, B.: Archives of Pediatrics 68:382, 1951.
3. Behrman, H. T., Combes, F. C., Bobroff, A., and Leviticus, R.: Ind. Med. & Surgery 18:512, 1949.
4. Turell, R.: New York St. J. M. 50:2282, 1950.

Legal Reform Needed to End Discrimination Against the Epileptic

HOWARD D. FABING, M.D.
Legislation Committee of the American League Against Epilepsy

ROSCOE L. BARROW, LL.B.
University of Cincinnati

*Revision of laws is necessary to allow persons with epilepsy to live normal, useful lives.**

SEIZURES of approximately 80% of epileptic patients can be controlled, and incidence of inheritance of the tendency to seizures is low. However, legislation enacted when epilepsy was considered an inherited mental defect perpetuates discrimination against persons with the disease.

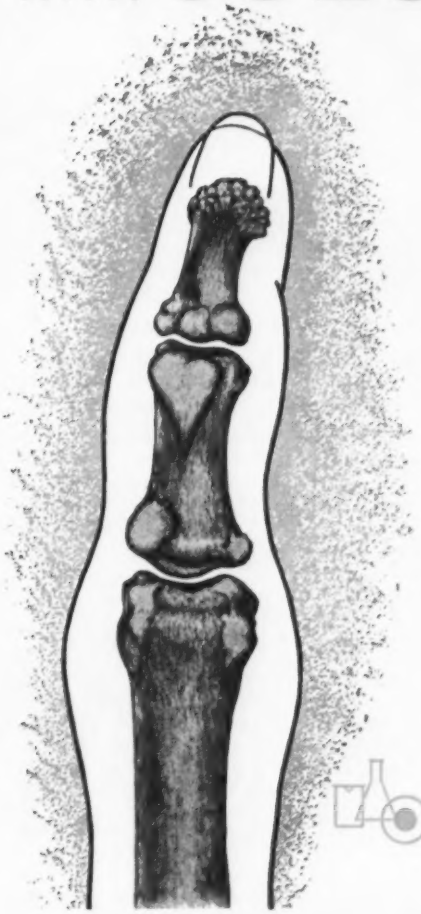
The legislation inflicts an economic loss on the country, since potential taxpayers are required to be taxspenders. If the epileptic is to be employed and an asset to society, laws pertaining to drivers' and marriage licenses, sterilization, and workmen's compensation must be changed.

Drivers' license laws—Psychologic adjustment is hampered and job opportunities are limited when the right to operate a motor vehicle is denied. Drivers' licenses should be issued to epileptics capable of safe driving. Licensing pro-

*Medical progress in treating epilepsy and the need for reform of laws affecting epileptics. Epilepsia 3:92-98, 1954.

When there's doubt about GOUT...

Rx NEOCYLATE TRADEMARK WITH COLCHICINE



Diagnosis...Therapy... Prevention of
GOUTY ARTHRITIS

The singularly dramatic response of gouty arthritis to colchicine makes this drug a quick, effective diagnostic tool[1] as well as a choice therapeutic agent. When signs and history are absent or confusing, NEOCYLATE* with COLCHICINE resolves the doubt and simultaneously provides the immediate analgesic effect of colchicine with potentiated salicylate.

Each tablet contains:

Sodium Salicylate . . . . . 0.25 Gm. (4 gr.)
p-Aminobenzoic Acid . . . . 0.25 Gm. (4 gr.)
Ascorbic Acid . . . . . 20 mg. (1/3 gr.)
Colchicine . . . . . 0.25 mg. (1/250 gr.)

Supplied: Bottles of 200, 500, and 1000 yellow, enteric-coated tablets.

1. Talbott, J. H.: Postgrad. Med. 5:386, May, 1949.

Literature on request

THE CENTRAL PHARMACAL COMPANY
Products Born of Continuous Research
SEYMOUR, INDIANA

*Trademark of The Central Pharmacal Co.

cedure should provide means for determining whether seizures are controlled.

In 47 states, the licensing official has the right to deny a license to any person that may be an unsafe driver. Officials often include all epileptics in the unsafe group. Licenses are specifically denied to epileptic persons in 19 states.

Patients with epilepsy can receive a license subject to continuation of medication in 13 states. A seizure-free period of two or three years is sometimes required, but some states consider each case individually.

The Wisconsin law is the most satisfactory. The licensing official may issue the license on recommendation of the attending physician and certification that the applicant is under treatment and does not have seizures. The license is usually given if seizures have not occurred for two years.

If a license is denied, the applicant may have a review before a board consisting of the licensing

(Continued on page 58)

". . . and I say anyone that drinks carrot juice can beat the wheat germ oil out of the likes of you!"

Gastric Hyperacidity: etiology

People being people, environmental factors contributory to gastric hyperacidity are hard to remove, even when their role is clearly defined. But, the physician has a sure, simple—even pleasant—way of relieving the acid distress caused by:

- dietary indiscretion
- nervous tension
- emotional stress
- food intolerances
- excessive smoking
- alcoholic beverages

Gelusil promptly and effectively controls the excessive gastric acidity of "heartburn" and chronic indigestion. And it affords equally rapid relief in peptic ulcer. Sustained action is assured by combining magnesium trisilicate with the specially prepared aluminum hydroxide gel.

Free from constipation: Gelusil's aluminum hydroxide component is specially prepared: the concentration of aluminum ions is accordingly low; hence the formation of astringent—and constipating—aluminum chloride is minimal.

Free from acid rebound: Unlike soluble alkalies, Gelusil does not over-neutralize or alkalinize. It maintains the gastric pH in a mildly acid range—that of maximum physiologic functioning.

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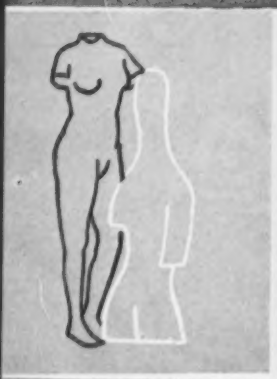

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official and 2 physicians qualified in diagnosis and treatment of epilepsy. A permit lasts six months and is renewed on recertification by the attending physician.

No accident involving a person licensed by this procedure has been recorded. Also, the number of persons admitting seizures has increased since the law was passed, so the legislation may encourage epileptics to seek treatment.

Marriage license laws—Marriage of epileptics is prohibited in 17 states. Some statutes declare the marriages void or a crime.

None of the statutes differentiates between idiopathic and traumatic seizures. Some persons have a low seizure threshold but never have an attack because trauma is avoided; these individuals may transmit a greater epileptic potential than persons with traumatic seizures.

Since most states permit marriages of epileptics and because all persons with the disease are not detected, laws do not materially reduce the epileptic marriage rate but only raise questions as to status of such a marriage and interest of a surviving spouse in an estate.

Sterilization laws—Sterilization laws apply specifically to epilepsy in 18 states, and statutes of 2 states are interpreted to include the disease. In 5 states, the statutes apply to all epileptics; in the other 15, only epileptics in institutions are affected.

None of the laws define the dis-

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order or take into account the etiology of seizures or whether control has been attained. In the 5 states applying sterilization to uncommitted epileptics, the decision may be made by a judge, a board of county commissioners, or other nonmedical authorities.

The statutes would not decrease incidence of epilepsy even if the eugenic basis for the legislation were sound because few epileptics are reached by the laws. However, the laws contribute to the stigma against epilepsy and should be removed.

Workmen's compensation laws—Resistance to hiring epileptics is strong because employees object to working with a person with the disease and because employers believe that epileptics have high accident rates and increase workmen's compensation payments. Statistics for accidents of epileptics are not available; however, controlled epileptics would not have accidents attributable to seizures.

Compensation laws should be changed to exempt the employer from liability for injury to or by an employee attributable to epilepsy. The second injury fund now used when a worker with only 1 eye, arm, leg, hand, or foot is injured should be applied to epileptics. The difference between payments for loss of a single member and the total disability allowance required when a handicapped person loses a second member is paid out of the fund.

Washington LETTER

Congress Considering Mental Health Recommendations

IF Congress does nothing else in the way of health legislation this year, it is quite certain to step up the campaign against mental illness. Congressional hearings so far have stamped irrefutable evidence into the record that this is the nation's greatest health problem—the most complicated, the most expensive, and the one in which least real progress is being made.

Congress is considering several approaches. Federal grants could be authorized for outside professional groups, such as the American Psychiatric Association, the American Medical Association, and the National Mental Health Committee, to finance a comprehensive, nationwide survey of the problem. One bill under consideration would have the federal government give such outside groups $1.25 million over three years for this project.

"You need to get outside more."

Another possibility is a similar survey conducted by a commission appointed by the President; this would be primarily a governmental effort, although the cooperation of outside groups would be solicited. The bill now before Congress would spend $1 million on this the first year and $1.5 million in subsequent years, until the work had been completed.

Still a third proposal is to step up appropriations but to use only the facilities now available for work against mental diseases; this would mean more research at the U. S. Institute of Mental Health and more grants to private investigators.

The Eisenhower administration is not opposed to any of these ideas, but has its own plan. The administration is asking Congress to start a five-year program of increased grants to states to pay for mental health services now operating, and in addition to vote money for special grants for special projects and for training of personnel.

It appears now that Congress favors giving money to outside professional groups to make a survey

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and turn in recommendations. However, the pressure for some action is so overwhelming that one of the other recommendations may be adopted.

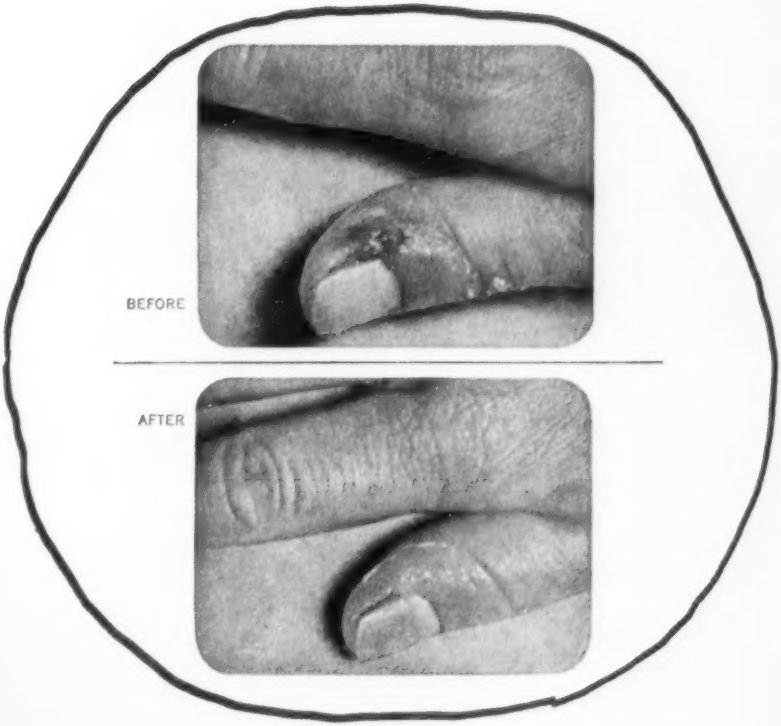
Congressional hearings on mental health so far have brought out facts that are well known to most psychiatrists but that nevertheless had a jolting effect on the committees.

One estimate is that mental illness is costing the United States $2.5 billion annually; a little more than half of the figure represents the cost of maintaining patients and the remainder the economic loss in their potential earnings.

Of the population, 6% are destined to spend some time in mental institutions. Each year 16,000 persons are admitted to mental hospitals. Half the hospital beds are for mental patients.

The heart of the problem, of course, is the low—and almost static—discharge rate. During the first year the patient, as a statistic, has a 50-50 chance of release at some time. After two years, the odds are 16 to 1 against him, and after eight years the odds are 99 to 1 that he'll die in an institution. One-quarter of the patients have been in hospitals for sixteen years or more, one-half for eight years or more, and three-quarters for two years or more.

Psychiatrists testifying at the hearings were unanimous in the opinion that a great deal more money has to be spent. They said that



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many qualified workers are ready with their projects and need only money to get started. At present, only 5% of the money spent on medical research goes for mental health.

A great deal can be done on basic research, the psychiatrists said. The committee was told that some hospitals that gave intensive treatment to all patients were able to raise their discharge rates as much as 250%. One psychiatrist guessed that, given the funds to complete experiments on new drugs, the chances for recovery of long-term patients would be tripled.

Washington Notes

¶ Under pressure from one committee, Secretary Hobby finally picked out two items from the administration's health program and gave them top priority. They are the two that are stirring up the most controversy—reinsurance and the plan for federal guarantee of health facility mortgages.

¶ Sen. Lister Hill (D., Ala.), a key man on health legislation, is determined that his bill for aid to medical legislation will come up for a vote. The bill is mostly for construction aid but would allow some funds for operating costs if the schools agreed to increase their freshmen enrollment by 5%.

¶ On its medical services report, the Hoover Commission is caught in crossfire. The American Legion says that the recommendations on

(Continued on page 68)

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veterans' care are too tight; AMA says that the Commission blundered by not accepting the recommendations of the medical task force on VA, which were still more stringent. The task force wanted to cut off all non-service connected care three years after the man's separation from service. Copies of both the commission and task force reports are available for 40¢ each from Superintendent of Documents, Government Printing Office, Washington 25, D. C.

¶ Rep. Frances P. Bolton, the veteran Republican Congresswoman from Ohio, at last is making progress on a nurses' bill. This one, the mildest in the long series she has offered over the last five years, merely would set up a commission to study the problem and submit recommendations.

¶ The Bradley commission, investigating benefits under the various veterans' programs, was officially instructed not to look into the medical department. However, the report will have to touch on the medical picture as many cash benefits depend on medical determinations.

¶ Testifying on mental health, Dr. Leo Bartemeier of Baltimore chose to identify himself merely as "director of the Seton Institute in Baltimore" and as head of the AMA mental health council. He was interrupted by Chairman Percy Priest (D., Tenn.), who inserted in the record a long description of Dr. Bartemeier's history and honors.

¶ This Congress appears to be one

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of the most survey-minded Congresses in history. In addition to the proposed surveys on nursing and mental health, bills now under consideration would authorize studies of the narcotic problem, of alcoholism, of problems of the aged and of general illness.

¶ Rep. Percy Priest had to come down from the top to get the post he wants. Three years ago, with the Democrats in control, he was chairman of the Health Subcommittee of the Interstate and Foreign Commerce Committee. Then Chairman Robert Crosser broke up the subcommittee system, and Mr. Priest had no more authority over health bills than any other Democratic member. Under the Republicans he had less to say. But the defeat of Mr. Crosser made Mr. Priest chairman when the Democrats regained power. A few weeks ago he installed the subcommittee system again, with himself as head of the health subcommittee. He is personally interested in mental health, aid to medical schools, and grants to laboratories.

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1. Russ, J. D.: Personal communication

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THE EDITOR'S PAGE

by WALTER C. ALVAREZ, *Editor-in-Chief*

A Great Achievement in Medicine

It is a wise man who knows when he has just lived through a great event in history. I can remember my thrill when, as a small boy, I listened with earphones to the faint sound of music coming out of the first Edison phonograph. I remember my thrill on hearing of the discovery of roentgen rays and of radium; I marveled over the first talk by wireless across the Atlantic; and I rejoiced over the discovery of Salvarsan, sulfonamides, penicillin, and cortisone.

Needless to say, I was thrilled by the announcement that the Salk vaccine has been found to be 80 to 90% effective, remarkably safe, and free from unpleasant side effects. This apparently means that at last one of the greatest scourges of childhood has been conquered. Perhaps, after a few years of control, the disease will largely die out, just as smallpox, typhoid fever, and diphtheria have.

What does all this mean to physicians? Mainly that others of the common virus diseases may in a few years be conquered. Perhaps before too long we can protect people against the common cold as well as against the more severe influenza.

During the weeks previous to the release, while listening to radio announcers say, "In only a few days, we will know if the Salk vaccine has banished polio," I was impressed with the fact that at last laboratory research in medicine has made the front page of the news. Also, I have been wondering what our old enemies, the antivivisectionists, are thinking these days as the great advances in medicine and the great delight of the public are cutting the ground out from under them.

Doubtless, it will some day happen in this country, as I am told it has already happened in Great Britain, that all sane people will recognize that the search for new drugs and sera and new types of operations is so important and so richly rewarding to man that no one but a fool or a fanatic would ever think of demanding that the experimentation be stopped.

We can be sure that the fanatics will go on demanding this, but there will be fewer and fewer persons willing to stop and listen to them. Always in the past, when an argument has gone on *ad nauseum,* everyone has walked off and left the arguers forgotten. Thus, Galileo could not convince his opponents that the earth went around the sun, but in a few years, with the general advance in scientific knowledge, no one was interested in the argument; people just knew that Galileo had been right.

Similarly, Pasteur could never convince Bastian and others that life can arise in a thoroughly boiled flask of bouillon. Eventually the arguers all died and by that time no one was fool enough to rise up and resuscitate the argument.

What does all this mean to us in medicine? It means, I think, that in the first half of April 1955 we have seen a *rapprochement* between physicians and laymen so close and sympathetic that it marks a great epoch in the history of medicine. It has brought physicians a wonderful "press," which we sadly needed.

All who have read Dr. Francis' announcement will now be rejoicing that a great victory has been won over suffering; a great victory has been won for the scientific method; a great victory has been won for scientific medicine against quackery and pseudoscience; and a great victory has been won by Dr. Salk, his predecessors in virus research, his associates, and the able men in the Infantile Paralysis Foundation who had the wisdom and courage to venture.

Light on the Cause of Sarcoidosis

Interesting is the fact reported by Drs. Francis J. Rogers and Earl W. Netherton (*J.A.M.A.* 155:974-976, 1954) that a pair of identical women twins who have been living some 3,000 miles apart had sarcoidosis about the same time. A search through the literature showed a report of 2 other identical twins who had a similar experience. It would seem then that sarcoidosis has a hereditary tendency.

Special Article

Carcinoma of the Pancreas

DWIGHT L. WILBUR, M.D.*
Stanford University, San Francisco

Prepared for Modern Medicine

PANCREATIC cancer may be one of the easiest or one of the most difficult diseases to diagnose. The clinical manifestations vary widely, depending on [1] the site of the lesion in the pancreas, [2] involvement of the bile ducts, [3] the presence or absence of pancreatic insufficiency, and [4] the effect on neighboring organs that are secondarily invaded.

Malignant disease of no other abdominal organ leads to so great a variety of symptoms and clinical syndromes. Painless and deepening jaundice or persisting jaundice accompanied by constant upper abdominal or back pain occurring for the first time in an aging person generally indicates that cancer has developed in the pancreas and the diagnosis is usually simple. However, when a patient in this age group has increasing nervousness, depression, and insomnia unaccompanied by significant abdominal symptoms, recognition of these conditions as the initial manifestations of the disease may be extremely difficult.

The most important factor in the diagnosis of carcinoma of the pancreas is to keep in mind the possibility of the disease. The chief difficulties in diagnosis have been expressed by Ingelfinger as owing to [1] variability of symptoms; [2] inaccessibility of the pancreas to examination; [3] difficulty of roentgenographic study; and [4] unavailability of easy and reliable tests of pancreatic function. The overall accuracy in diagnosis is uncertain. Berk believed it to be 25 to 30%. It is clearly less in patients without jaundice.

Despite the general opinion that objective diagnostic signs of the disease are infrequent, increasing experience indicates that a number of laboratory and roentgenologic procedures are very useful in suggesting or supporting the clinical diagnosis. Confirmation of the diagnosis usually depends on surgical exploration or necropsy.

SYMPTOMS

The symptoms of carcinoma of the pancreas can be grouped into 3 general categories, the first relating to the abdomen or gastroin-

*Clinical Professor of Medicine, Stanford University School of Medicine, San Francisco.

testinal tract, the second to general constitutional effects, and the third to involvement of organs other than the digestive tract. Similarly, the clinical syndromes accompanying the disease, particularly in earlier stages, are very diverse (Table 1).

TABLE 1. CLINICAL SYNDROMES

- Painless obstructive jaundice
- Painless obstructive jaundice with gastrointestinal bleeding, anemia, or both
- Abdominal or back pain with weight loss, anorexia, indigestion, and diarrhea
- Persistent indigestion with gradual failure
- Unexplained ascites
- General failure in health with [1] unexplained fever, [2] thrombophlebitis which may migrate or recur, or [3] psychic disturbances, especially depression, anxiety, and insomnia
- Miscellaneous symptoms and findings including: [1] obstruction of the third portion of the duodenum; [2] gastrointestinal bleeding; [3] ulcerating lesion of the stomach; [4] obstructive lesion about the splenic flexure; [5] deformity of the duodenum, stomach, or colon on roentgenograms; and [6] deficiency state characterized by steatorrhea, hypoproteinemia, and weight loss

Abdominal or gastrointestinal tract symptoms may include *pain*. Physicians almost uniformly hold the opinion that painless jaundice in older patients is the most common manifestation of the disease. Indeed, this thought is so dominant that the diagnosis is less often considered when pain is a prominent feature. However, pain is almost always noted in patients who are not jaundiced and in three-fourths of those who are. Mathiesen noted that pain was the first symptom in 45% of cases in a series he reported and was a cardinal symptom in 62%. In Dashiell and Palmer's experience with 90 patients, pain occurred in some form in all of 30 patients without jaundice and in 45 of 60 patients with jaundice.

Pain is generally characteristic. Eusterman and Wilbur describe it thus:

> It is epigastric in situation, radiates to the back, is dull aching in character, of moderate severity, constant, steadily progressive, exaggerated at night and without relationship to the events of the digestive cycle.

DaCosta as early as 1858 and Chauffard in 1908 made the interesting observation of the typical position in which a patient with this disease may sit hour after hour: The nervous, apprehensive patient, sitting up in bed and bending forward over folded arms which rest against his epigastrium, will maintain this position hour after hour because it gives him the most relief from pain. This long-maintained position, which indicates involvement of retroperitoneal tissue, eases tension on somatic nerves. Patients commonly require moderate doses of opiates such as codeine although the pain is rarely severe enough in the early course to make morphine necessary. Palmer pointed to the occasional striking temporary relief of pain with salicylates.

Jaundice occurs some time during the course of the disease in most patients but is the first or early symptom in only about two-thirds. Typically, icterus is pronounced and progressive and usually not pain-

less. In Palmer's series, jaundice was painless only in 25% of patients at the time of admission to hospital; in Bockus' experience, the condition remained painless throughout the period of observation in only 15% of patients.

It was long believed that carcinoma of the pancreas did not occur in patients with gallstones. This clinical rule did not hold, however, in a series reported by Mathiesen, in which 24% of patients had gallstones.

Anorexia is among the earliest symptoms. *Dyspepsia* early in the course may resemble that of peptic ulcer or gallbladder disease or may be nondescript.

Constipation is a very frequent symptom, closely related to diminished intake of food and to physical inactivity. *Diarrhea,* which is less common, may actually be due to steatorrhea from obstructive jaundice or from pancreatic insufficiency. When diarrhea accompanies steady upper abdominal pain of the type previously mentioned, carcinoma of the pancreas should be considered the most likely diagnostic possibility.

Gradual *loss of blood* with anemia of unexplained origin is infrequent. Carcinoma of the pancreas does not usually involve the mucosa of the gastrointestinal tube, although the growth may produce ulceration of the duodenum or the lesser curvature and posterior wall of the stomach, with erosion of a vessel and sudden extensive bleeding. Less commonly, bleeding occurs from varices after involvement of the liver or portal vein with portal hypertension or thrombosis. Hypoprothrombinemia from hepatic damage in long-jaundiced patients may also lead to or accentuate bleeding.

Obstruction of the third portion of the duodenum and less often other sections may lead to the predominant symptoms or findings with pancreatic cancer. The diagnosis is usually suggested by roentgen examination and confirmed by operation.

Unexplained *ascites* produced by occlusion of or pressure on the portal vein by hypoproteinemia or by carcinomatous peritoneal involvement may be the initial manifestation.

Among general symptoms, *loss of weight* is universal. It is usually severe and in Palmer's series averaged 32 lb.

Weakness is frequent but is, of course, not helpful in diagnosis.

Unexplained *fever,* which may be high and remittent, occasionally is noted. When such fever occurs with anorexia and gastrointestinal symptoms unexplained after roentgenologic and other studies, carcinoma of the pancreas, kidneys, or liver should be suspected.

Anemia of undisclosed origin is much less common with carcinoma of the pancreas than with malignant lesions of the gastrointestinal tract. Anemia with cancer of the pancreas strongly suggests that the lesion has ulcerated into the duodenum, stomach, or colon.

When carcinoma of the pancreas is manifested clinically by a number of bizarre and unrelated symptoms, not of gastrointestinal origin or

resulting from gastrointestinal disease, a fascinating diagnostic problem may be presented.

Years ago Yaskin pointed out that patients with pancreatic cancer may appear in a psychiatrist's office or on the neuropsychiatric wards of a hospital because of a variety of *nervous and psychic symptoms,* but particularly because of obstinate insomnia, depression, and anxiety. Not until some time after the development of these symptoms do the gastrointestinal or abdominal symptoms become apparent. In previously well older patients who for the first time have these nervous symptoms along with loss of weight or anorexia, the possibility of carcinoma of the pancreas should always be remembered.

Migrating or recurring *thrombophlebitis* involving the lower extremities without apparent cause is characteristic. Sproul observed that while thrombophlebitis occurred in patients with all sorts of carcinomas, the condition was more common with disease in the pancreas than elsewhere. Ingelfinger noted that this complication occurred more often when the body and tail of the gland were affected.

The mechanism by which thrombophlebitis comes about in these circumstances is still not clear, although Moser and associates have considered that this phenomenon may be caused by increased coagulability brought about by increased concentration of trypsin in the blood. When thrombophlebitis occurs without known cause, carcinoma of the pancreas should be strongly suspected.

Occasionally, *glycosuria* will be the initial evidence of disease and further investigation will disclose slight diabetes. In carcinoma originating in islet tissue, the reverse will be true and hypoglycemia with the typical accompanying symptoms will occur.

Carcinoma of the pancreas usually is apparent before *metastases* are found outside the abdomen. Occasionally, however, the disease will first manifest itself by metastatic involvement of the skeleton with an unusual form of demineralization of the bone resembling osteomalacia. A rectal shelf mass or an enlarged Virchow's node will be found or metastatic involvement of the lungs will be seen on roentgenograms.

SIGNS

In early stages of carcinoma of the pancreas, no observable physical abnormalities may be detected.

Jaundice, once established, is usually pronounced and progressive. Rarely, in cases of ulceration of the carcinoma involving the ampulla, jaundice may lessen and subsequently deepen.

Often a *palpable liver* is found but this is of little diagnostic value, particularly when jaundice is evident.

In 52% of the cases with jaundice observed by Palmer, a *palpable gallbladder* was present. Most physicians have not noted a large gallbladder in such a high proportion of cases, owing to difficulties in palpating the organ or uncertainty or unwillingness to interpret a questionable mass as a gallbladder. Pal-

pability is a very useful finding when definite but to be of real diagnostic value should be unequivocal.

An *epigastric mass* frequently is the finding which leads to diagnosis. Although occasionally slightly movable, the mass most often is fixed and it is tender or only slightly tender. It is found particularly in patients without jaundice.

Foamy, fatty stools are significant but uncommon.

Metastatic involvement of the rectal shelf or supraclavicular nodes, or elsewhere, does not necessarily indicate that the primary lesion is in the pancreas, but when a primary lesion cannot be found or if evidence of pancreatic disease is substantial, this finding may be helpful diagnostically.

Wasting and pallor are common but nonspecific.

Thrombophlebitis is the only significant physical finding.

PATHOLOGIC FEATURES

The mode of onset of symptoms and the clinical course of this disease depend largely upon the location of the lesion in the pancreas, the rapidity of growth, and the characteristic pathologic features.

Most commonly the lesions are in the head of the pancreas and in this area are believed to metastasize less often than primary lesions in the body or tail. One explanation may be that when the growth is in the head of the organ, death occurs earlier and before metastasis. The tumor may be well circumscribed, diffuse, multiple, or poorly delineated. The lesion frequently invades the deep somatic nerves, celiac plexus, superior mesenteric artery and vein, and the portal vein. The early invasion of these blood vessels is a major stumbling block to total surgical eradication. The liver and regional nodes are the commonest sites of metastasis.

Most pancreatic carcinomas are ductal in origin, but it is not always clear whether those arising in the head of the gland are ampullary or pancreatic in origin. Differentiation of these lesions is difficult because of the intimate anatomic relationship of the head of the pancreas to the ampulla of Vater and its adjoining structures. Some observers hold the opinion that the lesion commonly arises in the ampulla.

Recently Sommers, Murphy, and Warren reported that in about 41% of pancreatic carcinomas reviewed, there was circumstantial evidence for their development as a consequence of duct hyperplasia.

LABORATORY DIAGNOSIS

Palmer called attention to the incidence of transient glycosuria in over 25% of patients with carcinoma of the pancreas. In his experience, abnormal curves were demonstrated in 18 of 21 patients in whom glucose tolerance tests were done. Berk also noted abnormal glucose tolerance with surprising frequency. This test, when positive, is very useful in indicating pancreatic disease and in my experience is the most useful of laboratory procedures (Table 2).

Progressively deepening jaundice as measured by icterus index or serum bilirubin determinations, absence of bile in the duodenal drain-

TABLE 2. USEFUL LABORATORY FINDINGS

- Alterations in carbohydrate metabolism
  1] Transient glycosuria
  2] Transient hyperglycemia
  3] Abnormal glucose tolerance
- Alterations in metabolism of bile
  1] Deepening icterus
  2] Absence of bile in the duodenal content
  3] Diminution or absence of urobilinogen in the stool
- Alterations in pancreatic secretion and hormones
  1] Abnormal quantities of pancreatic enzymes in the blood
    a] Elevated blood amylase
    b] Elevated lipase
    c] Both
  2] External pancreatic secretion
    a] Decreased volume
    b] Decreased concentration of bicarbonate
    c] Decreased amylase, trypsin and lipase
- Small amounts of blood in the duodenal content

age, absence of urobilinogen in the urine, and a daily output of less than 5 mg. of urobilinogen in the stool indicate complete obstructive jaundice and strongly point toward carcinoma of the pancreas.

Comfort and Osterberg found elevations of the serum lipase in the blood of 40% of patients and Johnson and Bockus in 55% of patients with the disease. Other observers have been unable to confirm these findings. The serum amylase is much less likely to be elevated, particularly when pancreatic obstruction has existed for some time.

A number of observers have indicated striking abnormalities in external pancreatic secretion. These changes have to do principally with diminished volume and concentration of bicarbonate and of all enzymes. Susman found the volume of pancreatic secretion to be 2 cc. per kilogram of body weight per hour at the lowest limit of normal, while the average value in patients with carcinoma of the pancreas was 1.1 cc. per kilogram.

Not of practical value for the ordinary physician, this method of examination is limited to medical centers at which studies of external pancreatic secretion are regularly and accurately done.

A very reliable sign of carcinoma of the pancreas is return of blood-tinged fluid on tube drainage of the duodenal content. In a jaundiced patient this finding is almost pathognomonic of the disease.

ROENTGENOGRAPHIC FINDINGS

Not generally appreciated is the fact that carcinoma of the pancreas may cause some alterations in the roentgenographic appearance of those portions of the gastrointestinal tract that are anatomically related to the pancreas. Perhaps one reason this feature is not always given acute attention is that the radiologist, when examining the stomach and duodenum, may have a tendency to look principally for evidence of lesions in the stomach and first portion of the duodenum, which are far more common. Hence, a clinician, in referring a patient in whom he suspects cancer of the pancreas, should mention that possibility to the radiologist, who then could examine the patient with the disease specifically in mind.

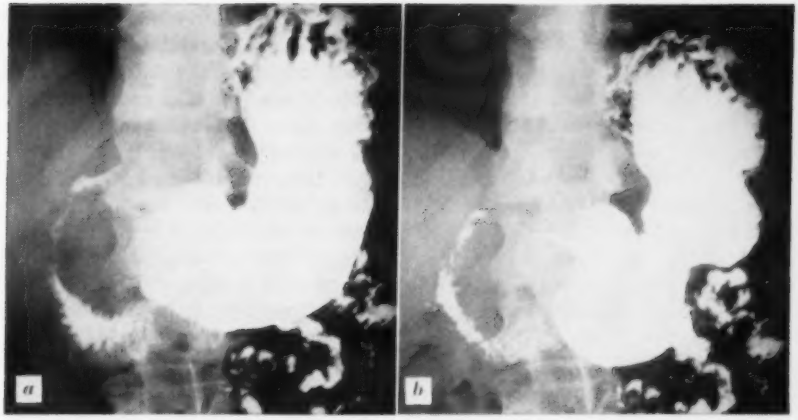

Fig. 1. Male, age 50, with painless jaundice for two weeks. Prone films of barium-filled stomach show narrowing of descending duodenal loop with apparent effacement of portion of mucosa. Finding was constant in 4 films and by fluoroscopic examination. Operation disclosed extensive carcinoma of head of pancreas.

Hodes, Pendergrass, and Winston recently have presented evidence to substantiate this view in studies of 105 patients with neoplasms in the pancreaticoduodenal region. Approximately 50% of the tumors were not recognized at the first roentgen examination but a correct diagnosis could have been made by restudy of the films in almost every instance.

Furthermore, abnormalities were noted in the neighboring organs in 42% of cases of carcinoma of the head of the pancreas in Kirklin's experience, in 66% in Berk's, and in 48 to 60% in Palmer's. The abnormalities noted occurred chiefly in association with lesions involving the head of the organ, and in Kirklin's experience these abnormalities were not necessarily dependent on the size of the tumor.

Poppel classified the changes in the stomach and duodenum as follows: [1] indenture; [2] enlargement and displacement; [3] invasion and fixation; [4] invasion and destruction; [5] obstruction; [6] alteration in peristalsis; and [7] unusual filling defect (Figs. 1 & 2).

Lesions of the body and tail of the pancreas are less likely to produce roentgenographic signs but frequently distort the posterior wall of the body of the stomach with or without ulceration or depress the stomach along the lesser curvature or lead to pressure on the transverse or descending colon or splenic flexure (Fig. 3).

Cholecystographic examination is rarely useful as a diagnostic procedure in jaundiced patients because the liver does not excrete enough dye for visualization. In patients with slight degrees of jaundice, the gallbladder may be visualized. Dur-

ing the past year visualization of the common bile duct with Cholografin in patients with no or little jaundice disclosed in a number of instances dilatation and obstruction of the duct and deformities of the distal end resembling defects due to carcinoma and not to calculi. The method may be useful diagnostically in such cases, but more observation will be needed for proper evaluation of this method. It should be noted that in examination with Cholografin, the distal end of the duct frequently is the portion that is least well visualized.

Sometimes the lesion may be demonstrable no more precisely than as an upper abdominal mass on a plain film of the abdomen. By urogram, barium studies of the stomach, duodenum, and colon, and other tests, the mass can be shown not to involve these organs.

A little used method, which in the experience of some observers gives a very useful roentgenologic sign of carcinoma of the pancreas, is insufflation of the stomach with air, followed by lateral radiographic exposures. An abnormal widening of the retrogastric space, measuring the distance from the anterior vertebral border to the posterior wall of the stomach, is characteristic of the disease.

Distal metastasis may be demonstrated occasionally in films of the chest or bones. In the latter, the appearance may be that of metastatic disease or of generalized osteoporosis or demineralization. In any circumstances, these findings are not diagnostic.

Fig. 2. Male, age 64, with jaundice, itching, and right lower quadrant pain for three weeks. Prone oblique film of barium-filled gastroduodenal region reveals narrowing of upper half of descending duodenum, with so-called inverted "3" sign near region of ampulla. Changes were seen in 4 of 8 films, and a mass could be palpated at fluoroscopy. Operation disclosed tumor, 8 cm. in diameter, in the head of the pancreas with extensive liver metastases.

OTHER DIAGNOSTIC METHODS

By use of a highly specialized technic, malignant cells may be found in the duodenal fluid recovered on duodenal drainage. Rubin and his associates noted positive results in 4 of 8 cases of pancreatic carcinoma. In 3 of the 4 cases in which cytologic studies were negative, the pancreatic ducts were completely obstructed.

Gastroscopic finding of an extraluminal mass pressing against and deforming the posterior wall or lesser curvature of the stomach may be noted rarely. It may be the only objective evidence of the disease.

TREATMENT

The most important point to be decided when the diagnosis of pancreatic cancer seems established clinically or when it is strongly suspected is whether surgical exploration should be undertaken. The over-all poor results of surgical treatment with attempted removal of the tumor have discouraged many physicians from recommending exploration.

Surgical exploration, however, has much to commend it:

1] The clinical diagnosis will be confirmed or disproved. This is of great importance, of course, if the suspected carcinoma is not found. Or, if it is found, the knowledge will be of value to the patient, his family, and his physician.

2] In some cases a lesion which may be amenable to surgical treatment, such as pancreatic cyst or common duct stone, may be found.

3] Itching and jaundice may be allayed with great physical and psychologic relief to the patient even though length of life is unaltered.

4] It may be possible to remove the lesion.

While the over-all results of this form of treatment in prolonging life are not good, Cattell pointed to certain temporary advantages: gain in weight, partial or complete relief of symptoms, and a better outlook.

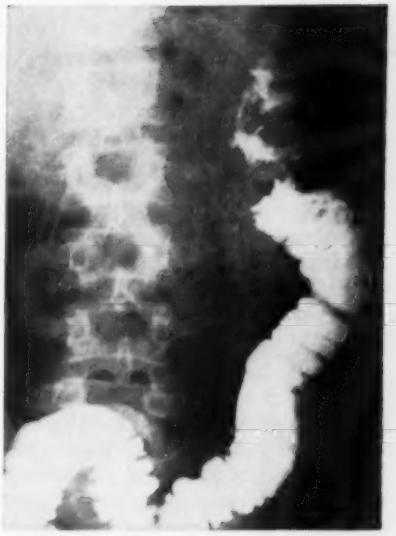

Fig. 3. Male, age 47, with abdominal pain and 25-lb. weight loss in three months. No tarry stools. Barium enema shows constricting lesion of splenic flexure region. Diagnosis was made of carcinoma of upper descending colon. Operation revealed carcinoma of pancreas invading colon, spleen, and diaphragm with liver metastases. Patient died eight days postoperatively of peritonitis. Diagnosis at autopsy was carcinoma of tail of pancreas, ductal variety, with extension.

Cattell also reported that 40% of patients with ampullary carcinoma were living and well after resection of the lesion and that 10% survived five years or more.

¶ ACTION OF ACTH is potentiated and prolonged when a zinc hydroxide suspension of the carboxymethylcellulose purified hormone is used. C. D. Bonner, M.D., and F. Homburger, M.D., of Tufts College, Boston, observe that smaller doses and fewer injections are required than with other forms of repository ACTH.

Bull. New England M. Center 16:159-167, 1954.

Congenital Hypoprothrombinemic States

ARMAND J. QUICK, M.D., ANTHONY V. PISCIOTTA, M.D.,
AND CLARA V. HUSSEY, M.S.
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*Patients with previously unexplained bleeding may have a prolonged one-stage prothrombin time of congenital origin.**

At least 4 distinct types of hypoprothrombinemia occur. All are congenital in origin and are denoted by a prolonged one-stage prothrombin time associated with hemorrhagic tendencies when the time exceeds twenty seconds.

The types can be differentiated by laboratory determinations such as the total prothrombin time and the prothrombin consumption test. Since the prothrombin time depends on the concentration of prothrombin and of labile and stable factors, a deficiency of any one of the substances will prolong the prothrombin time.

• With the first type of hypoprothrombinemia or panhypoprothrombinemia, both free and inactive prothrombin are lacking. The condition may be the result of inability to produce enough prothrombin because of deficiency of an apoenzyme necessary for synthesis of prothrombin. The state is familial and probably inherited. Unless the prothrombin time is measured, the condition may be indistinguishable from hemophilia, since the individuals have a slightly prolonged clotting time, deep-muscle bleeding, hemarthroses, hematuria, and bleeding from cuts and tooth extractions.

Both the prothrombin time and the total prothrombin time are prolonged. Addition of an equal volume of stored human plasma to the patient's plasma yields a normal prothrombin value, thereby differentiating the condition from labile-factor deficiency.

• With the second type of hypoprothrombinemia, the amount of free prothrombin is low, presumably because of alteration of the mechanism fixing the level of active prothrombin. The mechanism postulated is that inactive prothrombin—prothrombinogen—is blocked by an actual inhibitor or by molecular change. When plasma is stored at 4° C., the inhibitory activity is lost, and the active prothrombin is increased. As a result of this, the prothrombin time becomes shortened.

In fresh blood, the ratio of free to inactive prothrombin is maintained in an equilibrium mediated through a Y factor. The concentration of the Y factor, established through inheritance, is fixed, which accounts for the constancy of the prothrombin time. Although not directly affecting the prothrombin

*Congenital hypoprothrombinemic states. Arch. Int. Med. 95:2-14, 1955.

time, the Y factor is the actual determinant in fresh plasma, fixing the amount of free prothrombin.

The diagnostic laboratory findings include [1] normal total prothrombin value and [2] prolonged prothrombin time when the blood is mixed with an equal volume of normal blood. Addition of stable factor may partially correct the prothrombin time in this type of hypoprothrombinemia.

• Congenital lack of stable factor is a cause of a third hypoprothrombinemic state occurring more frequently than true congenital hypoprothrombinemia. The one-stage prothrombin time usually ranges from thirty to sixty seconds. Addition of a small quantity of serum or a partially purified preparation of stable factor reduces the prothrombin value to normal.

The condition has a distinct hereditary pattern. A patient with a greatly prolonged prothrombin time is homozygous; a slightly prolonged time indicates heterozygosity. Prothrombin consumption time in stable-factor deficiency is prolonged. Bleeding episodes should be treated by transfusion.

• Deficiency of a labile factor may also cause a hypoprothrombinemic state. The condition is congenital and familial. The defect may be carried as a recessive gene or as a dominant gene with variable penetrance.

The prothrombin consumption is very short. Mixing labile-factor–deficient plasma with stored plasma does not correct the prothrombin time. However, fresh deprothrombinized human or rabbit plasma added to an equal volume of the patient's plasma will restore normal prothrombin time.

Menopausal Muscular Dystrophy

MARK BONNIN, M.D., AND W. R. ADEY, M.D., UNIVERSITY OF ADELAIDE, AUSTRALIA, describe a myopathic condition which occurs predominantly in women at or after the menopause.

Dystrophy involves the large proximal muscles of the extremities. Difficulty in rising from a chair or climbing stairs is succeeded by inability to walk distances and unpredictable falls. Recovery of the erect position is often arduous. Weakness is symmetric and at first rapidly progressive. Little wasting occurs in affected muscles.

An incorrect diagnosis of neurosis or enfeeblement by age is frequently made. However, the disease can be accurately determined by physical examination and electromyographic studies or muscle biopsy. Hyaline necrosis, fragmentation of muscle fibers, and loss of muscle striations may be the end result of nonspecific inflammation.

Mixed tocopherols improve the muscle function of some patients. The efficacy of cortisone has not yet been ascertained.

Investigations of muscular weakness in middle life: the so-called menopausal muscular dystrophy. Australasian Ann. Med. 3:171-181, 1954.

Therapy for Contagious Diseases

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*Hospitalization and confinement in isolation wards are usually unnecessary in the care of patients with contagious disease.**

THE incidence of contagious disease varies with the degree of preventive medicine practiced. In most instances, immunization procedures avert or modify the disease and, except for patients with severe complications, hospitalization is rarely required.

Pertussis—General care of the patient with whooping cough entails constant nursing care; administration of oxygen to relieve cyanosis; aspiration and maintenance of an open airway and adequate oropharynx; and sufficient hydration and prevention of secondary infection by the use of antibiotics.

Hyperimmune sera and gamma globulin may give some relief in very young infants. Sulfadiazine, penicillin, and streptomycin have no effect on the course of the disease but should be employed to prevent secondary infection. Chloromycetin may be helpful in doses of 800 to 1,000 mg. per kilogram for eight to ten days. In most cases, the form of specific therapy should be decided empirically.

Diphtheria—When diphtheria is suspected, antitoxin should be given. The dose ranges from 10,000 to 40,000 units. Penicillin, 300,000 to 400,000 units every three hours, usually is sufficient as an antibiotic agent. Laryngeal diphtheria with obstructive breathing requires hospitalization.

Measles—Prevention of measles is desirable for [1] premature and newborn infants of mothers who have not had the disease; [2] control of hospital or other institutional outbreaks; [3] infants and children already ill with another infection; and [4] debilitated patients. Gamma globulin is preferred, 0.1 cc. per pound being given within six days after exposure. The resultant passive protection is effective four to six weeks.

When children in good health are exposed, modification of the course of the disease rather than prevention is desirable. Gamma fraction is administered within six days of exposure in a dosage of 0.02 cc. per pound of body weight. Modified measles probably confers permanent immunity.

German measles—Gamma globulin should be given to a pregnant woman exposed to the disease who has not had rubella. Highly potent fraction obtained from convalescent serum may be preventative.

*Recent developments in the management and treatment of contagious diseases. West Virginia M. J. 51:43-47, 1955.

Mumps—Gamma globulin is of no proved value for mumps, although preparations made from the blood of convalescent mumps patients will reduce the incidence of orchitis.

Varicella—The clinical manifestations of varicella usually are so slight that prophylactic measures are seldom necessary. If prophylactic treatment is desirable, human convalescent serum or human gamma globulin may be used. Administration of Pyribenzamine may alleviate pruritus.

Scarlet fever—Penicillin may reduce the period of quarantine to a few days to a week and practically eradicate streptococcal complications. The recommended dosage is 300,000 to 600,000 units of procaine penicillin each day for seven to ten days or 150,000 units of penicillin G orally every eight hours for eight to ten days.

The rapid improvement of the acute phase of scarlet fever does not preclude careful subsequent observation for rheumatic fever or glomerulonephritis.

Subacute Bacterial Endocarditis

PAUL A. BUNN, M.D., AND ELLEN T. COOK, M.D., STATE UNIVERSITY OF NEW YORK, SYRACUSE, believe two-thirds or more of the patients with subacute bacterial endocarditis will recover if an adequate and specific therapeutic regimen is instituted.

During the interval after the diagnosis is suspected and before results of organism sensitivity determinations are available, the patient should receive 12,000,000 units of penicillin daily. Dosage is adjusted or another antibiotic is substituted only after culture studies are completed. Specific antimicrobial therapy should be continued for at least three weeks after subsidence of the active infection. Accessory treatment for acute infection or heart disease may be necessary.

When large doses of penicillin are required, constant intramuscular or deep subcutaneous drip of the drug in saline or glucose should be substituted for intermittent intramuscular injection. Dosage of the antibiotic can often be reduced when Benemid is administered by mouth to delay penicillin excretion. Periodic determination of the blood level indicates whether dosage is adequate.

Primary causes of death are resistant and untreatable infecting organisms, insufficient antibacterial therapy, irreversible heart failure, and perforation or rupture of the aortic valves.

If antimicrobial therapy is successful, prognosis for long-term health is good except for patients with aortic insufficiency or heart failure. Heart size should be assessed after treatment has been completed.

Treatment of subacute bacterial endocarditis. Ann. Int. Med. 41:487-500, 1954.

Abnormal Physiology in Asthma

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*Dyspnea and high-pitched wheezing in patients with asthma suggest partial respiratory obstruction in numerous small bronchi or bronchioles.**

STRUCTURAL changes with allergic asthma consist of edema of the bronchial mucous membrane, hyperactive mucous glands in the tracheobronchial tree, and spasm and hypertrophy of bronchial muscle. With concomitant infection, the edema becomes inflammatory and bronchial secretions are purulent.

With longstanding asthma, the alveoli are usually distended. Overdistention of the pulmonary vessels with stiffening of the lung may cause many symptoms of asthma.

Physiologic changes that occur with asthma include overdistended lung; reduced vital capacity, rate of air flow, and breathing capacity; poor intrapulmonary mixing; augmented intrathoracic pressure; increased or decreased minute ventilation; reduced oxygen uptake and arterial oxygen saturation; and increased arterial carbon dioxide content.

Physical and roentgenographic examinations and laboratory stud-

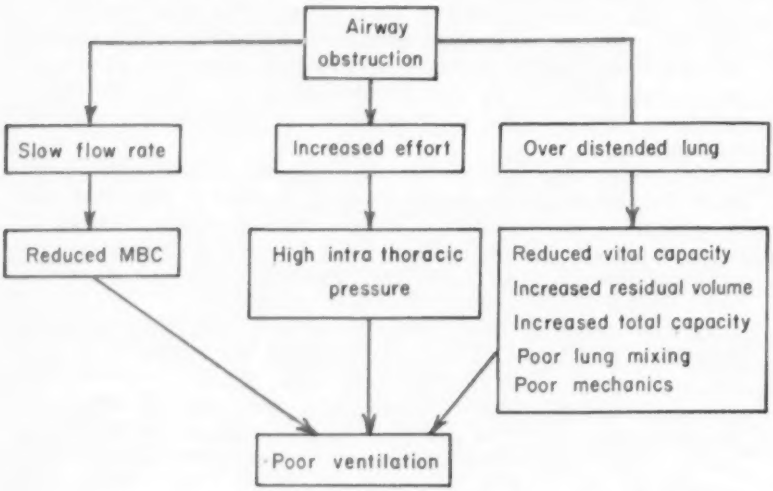

Fig. 1. Mechanics leading to poor ventilation in asthma

*Pathology and abnormal physiology in asthma. Virginia M. Month. 82:51-53, 1955.

ies show increased residual volume and total capacity in the lung. Reduced ventilatory function, or inability of the patient to move the usual amount of air in and out of the lung, is apparent by the reduction in vital capacity, rate of air flow, and maximum breathing capacity (MBC). Rate of air flow is most easily determined by noting the time required for a full inspiration and expiration.

Poor intrapulmonary mixing with asthma is manifest by the greater length of time needed to wash all of the nitrogen from the lung by oxygen breathing. Intrathoracic pressure varies widely, falling quickly during inspiration and rising well above zero during expiration.

Resting ventilation is increased with slight involvement but is less than normal when asthma becomes severe. In addition, during a severe attack, a reduction in oxygen uptake and arterial oxygen saturation as well as an increase in arterial carbon dioxide content is noted.

With severe asthma, the over-all effect of these manifestations of airway obstruction is poor alveolar ventilation (Fig. 1).

To ventilate the alveoli adequately, the patient must increase respiratory effort and, consequently,

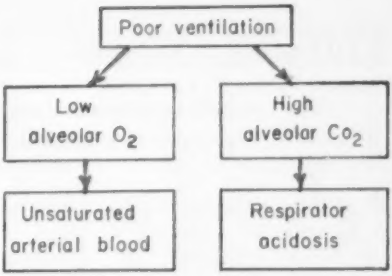

Fig. 2. Effect of poor ventilation in asthma

breathes with difficulty. If the obstruction becomes so severe that the increased effort is not sufficient for ventilation, the patient may have respiratory acidosis, hypoxia, and carbon dioxide accumulation (Fig. 2).

The major cause of death is bronchial obstruction from thick secretions of the bronchi. Associated findings include thickened bronchial walls, dilated alveoli, and hypertrophy of the right heart.

Treatment should be directed toward relief of airway obstruction. Since serious hypoxia rarely occurs, oxygen is usually not helpful and may even be harmful. Oxygen breathing dries bronchial secretions, making expectoration difficult, and also may cause or aggravate respiratory acidosis. Respiratory depressants should never be used.

¶ GASTROINTESTINAL HEMORRHAGE WITH LEUKEMIA is not always related to the blood disease but may be the result of gastric or duodenal ulcer. As bleeding in 3 of 5 individuals with both leukemia and ulcers was proved to be due to the latter, Lt. Col. Eddy D. Palmer of Walter Reed Army Hospital, Washington, D. C., emphasizes the importance of thorough diagnostic effort when bleeding from the gastrointestinal tract occurs in such persons.

Cancer 8:132-135, 1955.

Collagen Disorders in General Practice

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*In diffuse collagen disease, ground substance of connective tissue is predominantly involved, whereas other pathologic changes are more important in limited disease.**

CONNECTIVE tissue is composed of cellular and extracellular constituents. The extracellular structure includes collagen, reticulin, elastin, and gel-like ground substance, a polymerized carbohydrate-protein complex containing hyaluronic and chondroitinsulfuric acid, as well as other substances. Ground substance forms an intimate and vital link in transport between cellular elements and the blood-lymph system. This circulatory function may be compromised or ruined by depolymerization of hyaluronic acid.

Alterations in hyaluronic acid first cause fibrinoid degeneration of the ground substance. Interstitial circulation is gravely impaired, and collagen fibers quickly swell and disintegrate. Further symptoms and alterations vary according to the tissues and organs concerned. Fibrinoid degeneration occurs not only with hypersensitive states but in many unrelated conditions, such as peptic ulcer, burns, mechanical injury, and prolonged passive hyperemia, not necessarily listed as collagen disease.

The diffuse collagen diseases are scleroderma, dermatomyositis, and lupus erythematosus disseminatus. The limited types are rheumatic fever, rheumatoid arthritis, polyarteritis nodosa, thromboangiitis obliterans, malignant hypertension, and idiopathic ulcerative colitis.

Use of ACTH and cortisone is the greatest recent advance in treatment, excepting salicylates for rheumatic fever. Remissions of varying length and degree are induced, although cure is uncommon and maintenance therapy is usually required.

DIFFUSE DISEASE

Scleroderma is a classic example of diffuse involvement. Swelling and fragmentation of collagen fibrils are succeeded by cellular and vascular alterations. Sweat glands and hair follicles atrophy, edema develops, and the skin becomes tight and inelastic, causing contractures and dysfunction of the limbs.

The chest wall, throat, bronchial tree, esophagus, and myocardium may also be involved; renal involvement is rare. Breathing, eating, or circulation may be impeded. Diagnosis is usually readily made by symptoms, roentgenograms, electrocardiograms, and skin biopsy. Mortality from inanition and infection is about 10%.

*Collagen disturbances encountered in general practice. Postgrad. Med. 17:107-113, 1955.

With *dermatomyositis,* fibrinoid changes in skin and muscle are followed by hyaline and waxy muscular degeneration, edema, atrophy, and replacement with connective tissue.

The constitutional reaction is severe, with slight to high fever and drenching sweats. Tenderness over affected muscles, pallor, swollen eyelids, and multiform eruptions are observed. Biopsy may be singularly unrevealing. About half the patients die.

Lupus erythematosus disseminatus is much more common than is generally realized. Eosinophilic change in ground substance of the corium precedes thickening of collagen fibers. Lesions are found not only in skin and subcutaneous tissues but also in the heart, pleura, peritoneum, kidney, liver, spleen, central nervous system, and synovial membranes.

Erythematous plaques may appear on the area of the bridge of the nose, malar eminences, and cheeks and spread to the forehead, throat, fingertips, and toes. High fever, delirium, psychoses, and prostration are common, and mortality is high. The lupus erythematosus cell, though characteristic, is at times lacking in the active stage and occasionally is seen with other diseases.

LIMITED DISEASE

Rheumatic fever begins ten to twenty-one days after subsidence of a group A hemolytic streptococcic infection, such as nasopharyngitis. Initiated by swelling of collagen and fibrinoid degeneration or focal necrosis, the Aschoff granuloma soon prevails in every affected region—in subcutaneous tissue, synovial and serous membranes, blood vessels, heart, lung, and brain. The spleen and kidney are rarely involved.

Symptoms include fever, rapid pulse, profuse sweating, prostration, and migratory involvement of large joints. Warnings of heart trouble are persistent tachycardia and murmurs and disappearance of sinus arrhythmia. Pericarditis may be suspected from delirium and tachypnea before a friction rub occurs.

Rheumatoid arthritis, which may be mistaken for lupus erythematosus, has uncertain etiology. An inflammatory pannus covers the synovial membrane in affected joints. Cartilages soften and atrophy, and fibrous adhesions and bony ankylosis may result.

Small joints of the hands and feet are affected first, then the ankle, hip, wrist, elbow, shoulder, and spine. Radiographic examination reveals swelling of adjacent soft parts, narrowing of joint spaces, and osteoporosis. Hyperglobulinemia and lupus erythematosus cells are occasionally noted. In some instances, splenomegaly, anemia, and leukopenia develop. With proved hemolytic factor and megakaryocytic activity in bone marrow, splenectomy may be advisable.

Polyarteritis nodosa is apparently due to allergy and is increasing in incidence with use of the antimicrobial drugs. Affected persons are often asthmatic. Fibrinoid degeneration in the media of small and medium-sized arteries produces

localized or widespread necrosis and hyalinization. Intimal proliferation may lead to thrombosis in vital organs. Aneurysms may form and rupture in gastrointestinal, renal, pulmonary, or other tissues.

Polyarteritis can be recognized on microscopic inspection of the vascular lesions. All degrees of severity are possible, and the outcome is not uniformly fatal.

Thromboangiitis obliterans is often considered allergic, but the evidence is not convincing. Jews are most susceptible, and use of tobacco may be a factor. Owing to cellular infiltration and intimal proliferation, clots form in small and moderate-sized arteries. Lesions are segmental and are most severe in the legs, though cerebral, coronary, mesenteric, and renal vessels are also frequently affected.

Symptoms are intolerance to cold; paresthesias of burning, itching, and tingling; local tenderness; intermittent claudication; and, finally, pain at rest. Gangrene is frequently seen.

Malignant hypertension causes hyaline and collagenous thickening of the arteriolar intima, necrosis, and minor thromboses. Lesions develop simultaneously in the kidneys and throughout the body. Although the process may be violent from the outset, with death in six months, a fulminant stage is at times imposed on previously benign and slowly progressive hypertension. The cerebral symptoms may be outstanding.

The earliest lesion of *idiopathic ulcerative colitis* is submucosal fibrinoid degeneration, with reaction of round cells, neutrophils, and plasma cells, usually in the rectosigmoid area. The mucosa becomes hyperemic and edematous, then ulceration and hemorrhage ensue. Psychogenic factors are important.

Illness may start with slightly bloody diarrhea with no constitutional symptoms or with high fever, gross hemorrhage, abdominal cramps, and prostration. The bowel may perforate. Complications include portal cirrhosis, rheumatoid arthritis, and erythema multiforme or nodosum. Blood calcium is reduced, and tetany may ensue. Radiographic and proctoscopic examinations are invaluable aids to diagnosis.

¶ ANGINAL ATTACKS are decreased in number and severity and exercise tolerance is increased when persons with angina pectoris receive intramuscular injections of Hep-Nine B, a preparation of heparin and lipotropic agents. The medicament has little anticoagulant effect, but John T. Read, M.D., and Robin C. Obetz, M.D., of Ohio State University, Columbus, find that alimentary lipemia is diminished and giant lipoprotein molecules associated with atherosclerosis are altered. Patients fed unrestricted diets receive 1 cc. of the substance twice weekly for five weeks and then 1 cc. every two or three weeks. Toxic or side effects have not been observed.

Ohio M. J. 51:221-225, 1955.

Phosphoramide Therapy for Cancer

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*Many patients who have widespread neoplastic disease can be kept active and comfortable indefinitely by maintenance outpatient therapy with phosphoramides.**

THOUGH several chemotherapeutic agents are effective against lymphomas, palliative therapy of epithelial tumors is more difficult. Rate of growth of epitheliomas is slow so a drug must probably be administered over a long period of time and must be well tolerated by the host cells.

In general, nitrogen mustard and triethylenemelamine are not satisfactory for treatment of far-advanced epithelial tumors. However, many types of neoplastic disease are affected by triethylene thiophosphoramide (Thio-TEPA) and N-3 (oxapentamethylene) N'N" biethylene phosphoramide (ODEPA).

The phosphoramides seem to be most effective in treatment of adenocarcinoma of the breast and ovary and tumors of the central nervous system. Results are most pronounced when the agents are given locally, especially intrapleurally or into abdominal masses. The drugs may also be injected into a vein, muscle, artery, peritoneal cavity, pericardium, or cranium.

Doses of Thio-TEPA vary from 5 to 40 mg., and amounts of ODEPA are twice as large. Therapy must be individualized for the patient, type and location of tumor, and extent of disease. Injections are usually given at weekly intervals and are guided by the white blood cell level.

Greatest degree of leukopenia occurs in two to three weeks after a single dose of Thio-TEPA. A rapidly falling white cell count is a danger sign, and occasionally thrombocytopenia occurs with severe leukopenia. The only other side effects are occasional pain from injection and transient gastrointestinal upset or fever.

Drug action is slow, and results become increasingly apparent after many weeks' time. Objective signs include regression of soft tissue lesions, partial to complete healing of ulcerations, control of pleural effusion, reduction in ascites, roentgen-ray evidence of bone lesion healing, and control of signs and symptoms of brain metastases.

Pain, pruritus secondary to extensive inflammatory carcinoma, dyspnea, cough, and dysphagia are often decreased, and sense of well-being and appetite may increase.

Thio-TEPA was administered to 34 patients with far-advanced mammary carcinoma not suitable for surgery or irradiation. Previous

*Cancer chemotherapy. M. Ann. District of Columbia 24:55-62, 1955.

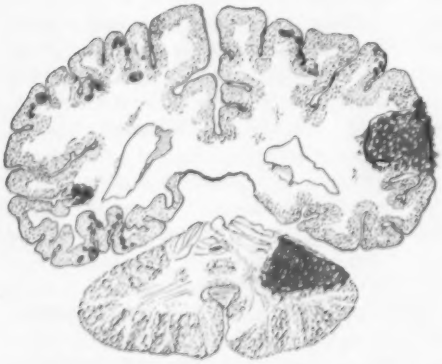
therapy included operation, irradiation, and hormones. Subjective improvement was reported by 25 patients, and 31 individuals showed signs of improvement lasting four to eleven months. Among 21 persons, beneficial effects are currently increasing.

Of 17 patients with carcinoma of the ovary or of the central nervous system, 16 had objective response to therapy and 13 felt better. Of the total group of 96 patients with cancer at various sites who received Thio-TEPA, approximately 83% improved.

Cerebral Vasothrombosis with Heart Disease

I. M. SCHEINKER, M.D.,* NEW YORK MEDICAL COLLEGE, NEW YORK CITY, calls attention to frequent occurrence of small cerebral vein occlusion with scattered areas of hemorrhagic softening in the cerebral hemispheres among patients with chronic heart failure.

The predominant cerebral signs and symptoms among 15 patients aged 42 to 85 with chronic heart failure complicated by cerebral vasothrombosis were various degrees of mental disturbances and focal signs such as epileptic seizures, hemiplegia, and cerebellar symptoms. Signs of cardiac decompensation, especially edema of the legs, were noted among 10 patients before the cerebral complications occurred. Only 2 patients had hypertension.



Extremely distended and congested small veins of the cerebral cortex are occluded. The thrombi consist of strands of fibrin, leukocytes, and platelets. The walls appear preserved, and the major vessels are not involved. Coronal section of the brain shows multiple areas of hemorrhagic softening confined chiefly to the cortical gray matter (see illustration).

Microscopic examination reveals thrombus formation in various stages of organization. The cortical tissues show hemorrhagic infarction, and changes in the nerve cells are similar to those seen with cerebral hypoxia.

*Deceased.

Cerebral vasothrombosis in cardiac diseases: clinicopathologic study. Ann. Int. Med. 42:128-135, 1955.

Acute Intermittent Porphyria

MEYER MARKOVITZ, M.D.
University of Illinois, Chicago

*Test for porphobilinogen should be done if a patient has abdominal pain with few physical signs, peripheral neuropathy, and persistent psychoneurotic symptoms.**

Persons with porphyria apparently have a defect in the metabolism of pyrroles so that abnormal types and amounts of porphyrins are excreted in the urine. The acute intermittent form of the disease is the most common.

Abdominal pain, frequently accompanied by nausea and vomiting and constipation, almost always occurs with porphyria and is often the first symptom. Patients may have tenderness on palpation, but rebound tenderness is not noted and the abdomen is soft. Since pain may suggest an acute surgical emergency, laparotomy, appendectomy, and pelvic operations are often done before diagnosis is established.

Over three-fourths of patients have peripheral neuropathy. Motor symptoms vary from weakness to quadriplegia. Initial site and spread of weakness are unpredictable. The deep tendon reflexes often vary.

Slight sensory loss, generally diminished perception of pin prick, is sometimes noted. Sensory examination is often difficult because of severe muscle pain and tenderness. Burning or aching muscle pain is occasionally the chief symptom.

Mental or psychic changes are also noted in over three-fourths of instances. Irritability, tiredness, or restlessness may be the only alterations, but over half of the patients have hallucinations, delirium, confusion, or epileptiform seizures. Diagnosis of schizophrenia, hysteria, depression, or paranoia is sometimes made.

Cranial nerve involvement is frequent and ranges from vocal cord paresis, which may produce a high-pitched whining voice, to respiratory failure and death.

Moderate hypertension, tachycardia, and fever are often noted. About 70% of patients have dark urine. Tests may reveal leukocytosis or elevated blood urea nitrogen.

Roentgenographic findings are nonspecific and include slow passage of a barium meal, dilated loops of small or large bowel, impacted feces, and atony of the esophagus or duodenum. Fluid levels may suggest intestinal obstruction.

Diagnosis of acute intermittent porphyria is established when the reaction to the Watson-Schwartz test for porphobilinogen is positive and the patient is not photosensitive. Types of porphyrins are identified

*Acute intermittent porphyria: a report of five cases and a review of the literature. Ann. Int. Med. 41:1170-1188, 1954.

by further tests. Demonstration of uroporphyrin of Waldenström type in the urine is also diagnostic.

The diagnosis should be made to avoid unnecessary operations and exposure to drugs—barbiturates, sulfonamides, or heavy metals—that may precipitate exacerbations, but no specific therapy is available. Since remissions and exacerbations are spontaneous, evaluation of a therapeutic agent is difficult.

A trial with ACTH is probably advisable, though increase in appetite and euphoria may be the only beneficial effects. Exercises and hydrotherapy may improve muscular function.

Mortality is over 50%. Prognosis is favorable if the cranial and peripheral nerves are not involved, but the fatality rate is from 60 to 90% among patients with central nervous system symptoms.

Tests for Borderline Hyperthyroidism

LESLIE ZIEVE, M.D., BENGT SKANSE, M.D., AND ALVIN L. SCHULTZ, M.D., VETERANS ADMINISTRATION HOSPITAL AND UNIVERSITY OF MINNESOTA, MINNEAPOLIS, AND UNIVERSITY OF LUND AND MALMÖ GENERAL HOSPITAL, MALMÖ, SWEDEN, advise both radioactive iodine (RI) and protein-bound iodine (PBI) determinations in cases of doubtful hyperthyroidism.

The RI method, which measures thyroid uptake or renal excretion of I^{131} in twenty-four hours, is the most effective of several tests rated. The PBI test is about four-fifths as accurate, the basal metabolic rate one-fifth.

Advanced statistical technics were employed in evaluating diagnostic efficiency. Of 84 subjects, half were euthyroid, with such conditions as nontoxic goiter and anxiety neurosis, and the rest were slightly hyperthyroid. All diagnoses were made after lengthy observation.

Laboratory results were analyzed to [1] compare ability of tests to differentiate the 2 groups; [2] evaluate the independent contribution of each method; and [3] determine common test factors.

Utilizing the discrimination ratio, the RI was rated 64.3% and the PBI 53.3%. In spite of many common factors, the 2 methods combined scored 74.6%, a significant improvement. The fact that RI alone was nearly nine-tenths as effective as the combination is fortunate, however, since PBI is seldom available.

The BMR contributed little; all 3 tests together rated only 75.1%. The subject's age, pulse rate, pulse pressure, and total cholesterol value seemed irrelevant to diagnosis.

Comparative value of the basal metabolic rate, chemical protein-bound iodine, and radioactive iodine excretion or uptake in the diagnosis of borderline hyperthyroidism when used individually or in combination. J. Lab. & Clin. Med. 45:281-285, 1955.

Photographic Report on Hansen's Disease

GILBERT M. HALPERN, M.D.
Honolulu

Prepared for Modern Medicine

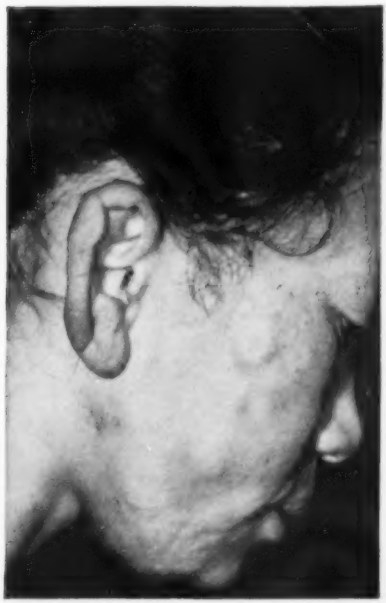
LEPROSY, called Hansen's disease in some areas, offers real adventure to the medical photographer.

The disease is chronic, contagious, and infectious and is characterized by destructive changes in the skin and nerve structures of the human body. The causative factor is *Mycobacterium leprae*, an acid-fast bacillus which in some respects resembles *Myco. tuberculosis*.

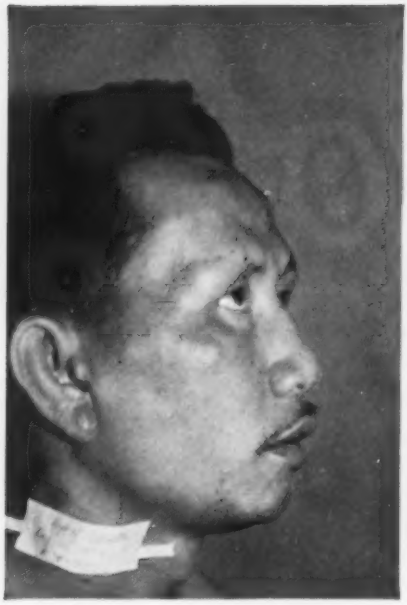
Because *Myco. leprae* is attracted to the peripheral nerves and the skin, the earliest signs of Hansen's disease are superficial anesthesia resulting from neural involvement and cutaneous lesions caused by granulomatous infiltration of the skin. The dermatologic pattern may resemble lymphoblastoma, psoriasis, tinea circinata, urticaria, and many other common dermatoses.

Diagnosis is based on 3 cardinal signs: [1] superficial anesthesia, that is, thermal and tactile; [2] acid-fast bacilli in the tissue fluid of the cutaneous lesions; and [3] enlargement of peripheral nerves.

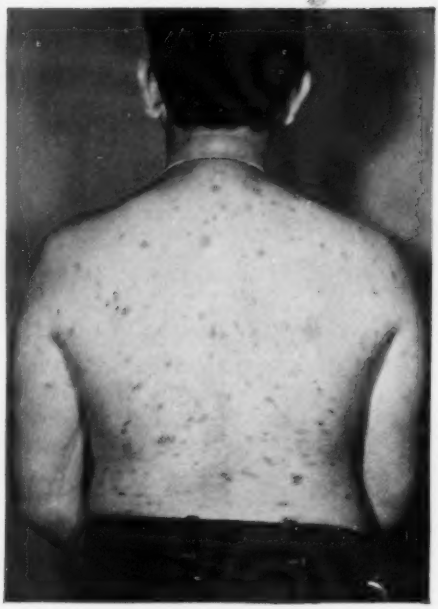
Leprosy is no longer considered a hopeless disease. The era of antimicrobial therapy has produced drugs, in particular the sulfone agents, that definitely affect *Myco. leprae*. These medications cause a gradual resolution of the granulomatous infiltrations of the skin, the mucous membranes, and affected nerves, with destruction of acid-fast bacilli.



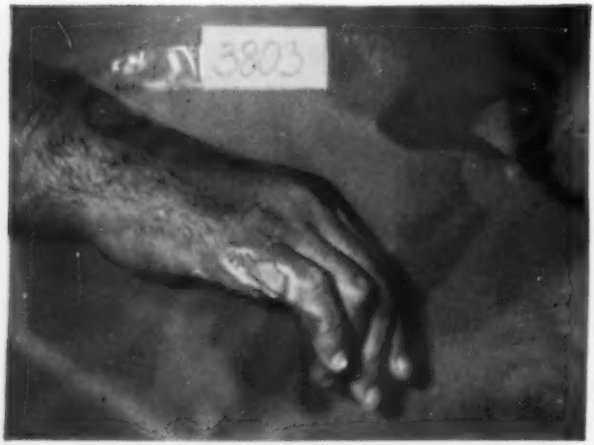
Heavy lepromatous infiltration of the face and especially of the right ear. Acid-fast bacilli were recovered from the tissue fluid of the facial and ear lesions in great abundance.



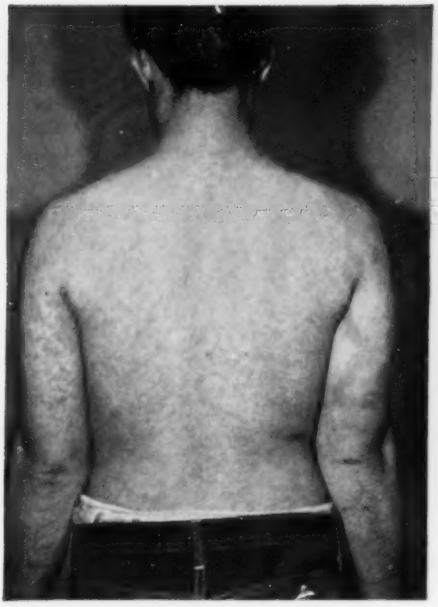
Lepromatous leprosy showing diffuse infiltration of the face and ear. A large nodular lesion is seen in the lobe, with alopecia of the temporal half of the eyebrows and eyelashes.



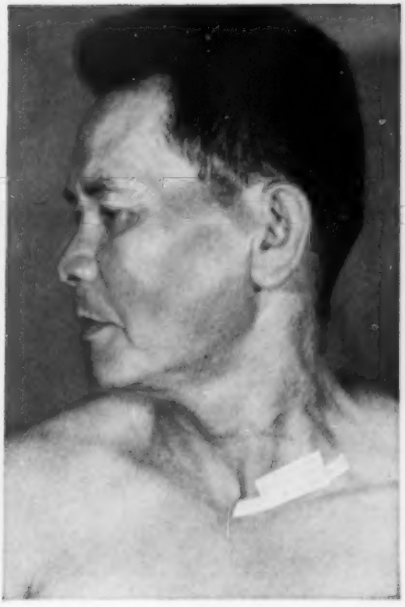
A generalized eruption of red infiltrated nodules and plaques of lepromatous leprosy.



Second-degree burn of the little finger of a leprous hand. Contractures of the fingers and atrophy of interosseous muscles are seen. Tactile and thermal anesthesia over the ulnar surface of the hand is complete.

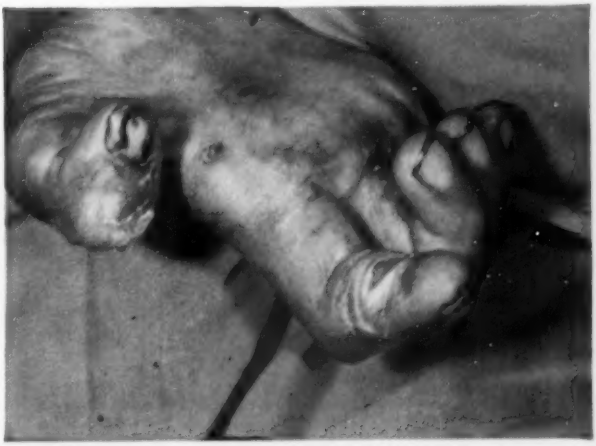


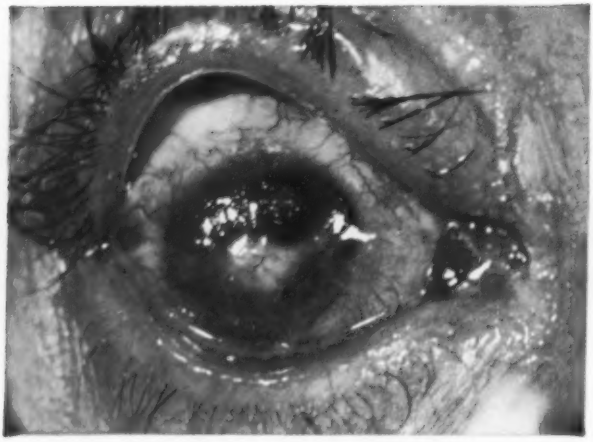
A diffuse eruption, with lepromatous nodular lesions scattered over the entire skin area.



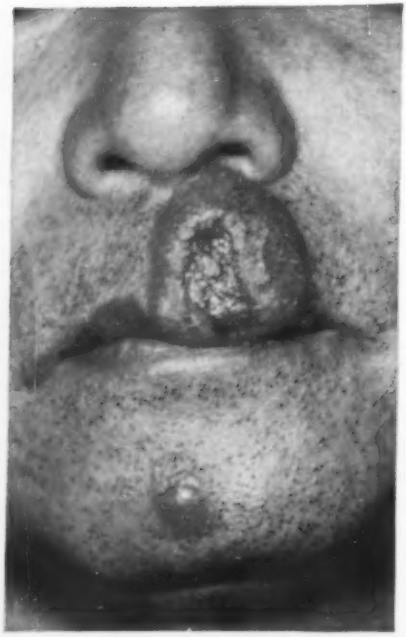
An erysipeloid lesion of tuberculoid leprosy involving one side of the face and the ear. Great and posterior auricular nerves are enlarged. Note the cordlike anterior ramus of the great auricular nerve passing over the sternocleidomastoid muscle.

The claw hand of tuberculoid leprosy, showing contracture of all fingers and atrophy of the interossei and the lumbricalis muscles. There is also deep ulceration of the palmar surface of the index finger.





Leprosy of the eye, manifesting corneal leukoma and vascularized keratitis.



The nodular plaques of tuberculoid leprosy in an acute reaction. The large lesion on the upper lip shows ulceration.

Reflex Sympathetic Dystrophy

DANIEL F. CASTEN, M.D., AND ALBERT M. BETCHER, M.D.
Hospital for Joint Diseases, New York City

*The reparative processes after trauma to an extremity may proceed in a disorderly pattern, with a poorly functioning, painful limb the end result.**

ORDERLY return of function and anatomic integrity is the usual and expected response of an extremity after injury. However, not infrequently, reflex sympathetic dystrophy may develop. The condition may be defined as an excessive or abnormal response of an extremity to injury. Constant characteristics are [1] excessive and unduly prolonged pain, [2] vasomotor disturbances, [3] delayed functional recovery, and [4] trophic changes.

The reaction is unrelated to extent or nature of the trauma and may occur despite competent treatment. The initial injury may be very minor, with no break in the skin or disturbance of soft parts or bone continuity. Often, only fine sensory nerves are traumatically divided. A possible explanation is that overactivation of the central nervous system cell stations after trauma causes hyperactivity of the sympathetic nervous system reflex arcs.

Diagnostic criteria are rigid. The 4 constant characteristics of pain, vasomotor disturbances, delayed return of function, and trophic alterations must be demonstrated. Thus, adequate treatment is assured before irreversible damage occurs, and patients with other disorders of the extremities are excluded.

Onset of signs and symptoms varies in time and character. Slight pain may begin within a few hours after injury and become severe and unrelenting. In other instances, onset is insidious, and delayed functional return or vasomotor changes are the first signs. Careful observation of the patient generally allows diagnosis before the syndrome is fully developed.

Pain may be excruciating, burning, or knifelike or, on the other hand, dull, aching, or throbbing. Discomfort may be felt at rest or elicited by motion or emotional stimulation. Pain is usually diffuse and is seldom limited to a definite nerve distribution. When the upper extremity is involved, radiation may extend to the shoulder and base of the neck.

Vasomotor changes may be slight or severe and consist of either vasoconstriction, with cold, thin, glistening, and moist skin, or vasodilatation, with warm, dry, scaly skin. Trophic changes vary and involve the skin, subcutaneous tissue, muscle, joint structures, and bone. Edema occurs early, osteoporosis late.

*Reflex sympathetic dystrophy. Surg., Gynec. & Obst. 100:97-101, 1955.

During the early phases, the patient may resist motion because of pain and maintain a guarded rigidity of the extremity. Later, after trophic changes have occurred, mechanical causes prevent return of function. Delayed use of the limb, while secondary to pain and vasomotor disturbances at the onset, becomes a more independent sign as time passes and may be the most disabling feature of reflex sympathetic dystrophy.

In terms of onset, intensity, and relative predominance of a group of symptoms, 3 distinct gradations of the syndrome are definable. With *grade 1*, pain predominates and generally begins early. Vasomotor phenomena are also severe, and the patient voluntarily fixes the involved extremity against the slightest motion. Atrophy of skin, subcutaneous tissue, muscles, and bones eventually occurs. Functional impairment will be permanent unless pain is relieved early.

Grade 2 is not as severe as grade 1 and is slower in developing and longer in duration, since the patient delays seeking medical aid. *Grade 3* is the least severe form and the most frequently overlooked. The patient's increasing need for analgesics may be the first sign. The wound appears to be healing well, but close inspection shows that vasomotor alterations have taken place.

Treatment must be instituted early for all grades to prevent permanent disability. The patient must understand the nature of the disease to insure cooperation, and expert physical therapy to restore function is begun as soon as subsidence of pain allows. Most important, the sympathetic outflow must be interrupted either by continuous procaine ganglion block or by surgical ganglionectomy. The second, third, and fourth thoracic ganglia and, occasionally, the stellate ganglion for the upper extremity and the first, second, and third lumbar ganglia for the lower extremity are removed.

For grade 1 disease, early surgical intervention is required. Procaine blocks may suffice for grade 2 and should be all that is necessary for grade 3 involvement.

¶ VENOUS SPREAD OF TUMOR CELLS in patients with colorectal carcinoma may possibly be averted by preliminary ligation of veins during surgery. Cancerous cells were not recovered from the blood of the mesenteric channels by the perfusion technic in 3 of 7 instances of extension noted by histologic methods. However, Edwin R. Fisher, M.D., and Rupert B. Turnbull, Jr., M.D., of the Cleveland Clinic and the Frank E. Bunts Institute, Cleveland, believe that the existence of vascular tumor thrombi does not necessarily imply that embolization will occur. In 4 patients, the neoplastic elements were demonstrable by cytologic means but not histopathologically.

Surg., Gynec. & Obst. 100:102-108, 1955.

Surgery for Gallbladder Disease

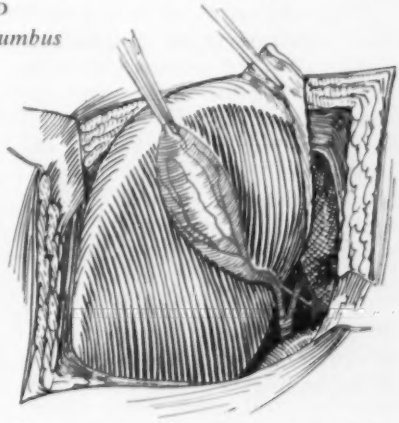
ROBERT M. ZOLLINGER, M.D., E. THOMAS BOLES, M.D.,
AND GLENN B. CRAWFORD
Ohio State University, Columbus

*Prompt surgical therapy for disease of the gallbladder often prevents development of complications.**

ALTHOUGH the symptoms of chronic gallbladder disease are well known and the accuracy of diagnosis with the cholecystogram is quite high, over a third of patients have one or more complications, such as pancreatitis, calculi, or acute cholecystitis, at the time of hospitalization. Procrastination by the patient is often significant in the delay in therapy.

Positive demonstration of stones is the ideal basis of recommendation for operation; poor filling, delayed emptying, or unusual size or shape of the gallbladder is not sufficient evidence. If the cholecystogram is apparently normal, surgery is not done unless the patient has had repeated typical attacks of biliary colic.

Proper positioning and satisfactory relaxation of the patient and a liberal exposure of the gallbladder area are important factors in cholecystectomy. The cystic duct should not be cut until the entire region of junction with the common bile duct is visualized (see illustration). The frequent variations



Operative site, showing junction of the cystic and common bile ducts

of anatomy in the biliary region must be kept in mind.

Diagnosis of acute cholecystitis justifies immediate hospitalization, since the subsequent course of the disease is unpredictable. Dehydration is corrected with intravenous infusions, and pain is relieved by administration of Demerol and atropine. Antibiotics are ordinarily given. With severe disease, abdominal findings, white cell count, pulse, temperature, and narcotic requirements are evaluated every four hours.

If improvement is steady and sustained, conservative measures are continued. The time of operation depends upon response to the conservative measures. If the abnormal

*The diagnosis and management of biliary-tract disease. New England J. Med. 252:203-208, 1955.

findings subside progressively, surgery is delayed until the patient is ambulatory and taking a full diet. In this group, which includes about 60% of patients, cholecystectomy is performed several days or a week after admission to the hospital.

About 20% of patients with acute cholecystitis either have exacerbation of acute manifestations after an initial response or fail to improve from the onset. In these instances, surgery is usually done when hydration is complete, often within twenty-four hours of admission.

Another 20% of patients steadily worsen despite intensive conservative therapy. The possibility of impending or actual perforation of the gallbladder should be considered, and surgery is done as soon as possible.

About 20% of patients with cholelithiasis have calculi in the common bile duct. This complication may produce jaundice, block the pancreatic duct and cause pancreatitis, or escape detection at operation and lead to recurrent symptoms. The common duct should be explored if the common and cystic ducts are enlarged, small stones are in the gallbladder, evidence of pancreatitis exists, or secondary biliary tract operations have been necessary. If available, an operative cholangiogram may decrease the necessity for exploration of the common duct.

Surgical Use of Cellulose Sponges

JOHN R. PAINE, M.D., AND RICHARD W. EGAN, M.D., BUFFALO GENERAL HOSPITAL AND UNIVERSITY OF BUFFALO, N.Y., find that sponges made of cellulose recovered from wood are quite useful during operative procedures when employed as substitutes for gauze sponges.

The cellulose sponges are thin, white, less resilient than older products, and have smoother surfaces. The material can absorb 10 times the sponge weight in water and, in the moist state, has a tensile strength of about 90 lb. per square inch.

The sponge can be easily rinsed after soaking with blood and quickly returned to the operative field. Thus, fewer sponges are needed at the table, and the sponge count is less time consuming and more accurate.

The repeated rinsing of a few sponges in a known amount of sterile solution allows blood loss to be measured easily and fairly accurately by utilizing a photoelectric colorimeter. Blood loss on drapes, wound towels, and gowns is not included. To avoid any contamination of the operative field by microorganisms, Zephiran chloride, in a 1:5,000 solution, is used for rinsing. The solution is well tolerated by delicate tissues and hemolyzes the red blood cells.

The use of cellulose sponges in surgery. Surgery 37:242-250, 1955.

Early Diagnosis of Lung Cancer

JOHN C. JONES, M.D., JOSEPH L. ROBINSON, M.D.,
AND B. W. MEYER, M.D.
University of Southern California, Los Angeles

*Prognosis for pulmonary carcinoma can be improved only if surgery is more frequently performed before the neoplasm has extended beyond the lung.**

INCIDENCE of successful pulmonary resections for cancer can be increased by greater use of chest roentgen-ray examination. Asymptomatic peripheral lesions, formerly undetected until metastasis or extrapulmonary extension occurred, are often evident on a roentgenogram while extirpation is still feasible.

Chest roentgenologic examinations should be included in every physical examination, and patients should always be questioned about respiratory symptoms. Examination of all male patients over 40 years of age for lung carcinoma is advisable.

Shadows on films of adult males that cannot be explained should be considered as possible neoplasms. Exploratory thoracotomy is recommended if diagnosis is doubtful; mortality for the procedure is less than 1%.

The interval between onset of symptoms and surgery has not been diminished in the last ten years. Delay in diagnosis caused by widespread use of antibacterial drugs offsets increasing awareness of physicians. Prolonged antibacterial therapy should therefore be avoided.

Surgery is feasible for only half of patients with pulmonary cancer when the diagnosis is made. Operation is not recommended if [1] distant metastasis is evident; [2] the cancer has extended into the chest wall, pleura, mediastinum, or other adjacent structures; [3] bronchoscopic study shows that the cancer is above the carina or in the opposite bronchus; or [4] the patient is a poor surgical risk.

Resection of all or part of a lung is accomplished for only about half of the patients operated on. Operation is limited to lobectomy if [1] diagnosis is established only by surgical exposure, the lesion is peripheral and located away from the fissures, and lymph nodes are not affected or [2] pneumonectomy is not feasible because of low pulmonary function and the lesion seems amenable to lobectomy.

The five- to ten-year survival rate for 302 patients with lung cancer was 6.3%. Of 64 patients who had pulmonary resections, 12 are alive and well five to ten years after surgery and 8 died from causes unrelated to cancer. Therefore, the survival rate after surgical therapy is about 31%.

*Primary bronchogenic carcinoma of the lung. Arch. Surg. 70:265-275, 1955.

Surgery for Primary Varicose Veins

WILLIAM H. PRIOLEAU, M.D., AND J. MANLY STALLWORTH, M.D.
Roper Hospital and Medical College of South Carolina, Charleston

*The most effective treatment for varicose veins is ligation and excision under visual and palpable control.**

VENOSTASIS associated with degeneration of the walls and valves of poorly supported superficial veins of the legs generally results in dermatitis, ulceration, and phlebitis. Open operation most effectively removes diseased superficial vessels and interrupts the main paths of communication between the deep and superficial systems. Mechanical stripping is usually inadequate, and sclerosing solutions may cause uncontrolled thrombosis.

Patients should be examined toward the end of a day of normal activity since dependent edema and venous dilatation are greatest at that time. The condition of the veins is ascertained by inspection, palpation, and percussion. In obese patients, pigmentation in the ankle region may be the only manifestation of venous insufficiency, and venograms are of diagnostic value.

If the patient has edema, dermatitis, or ulceration, a firm supportive boot extending from the metatarsal region to the knee is applied and worn until the skin is healed. During this period, the patient remains ambulatory.

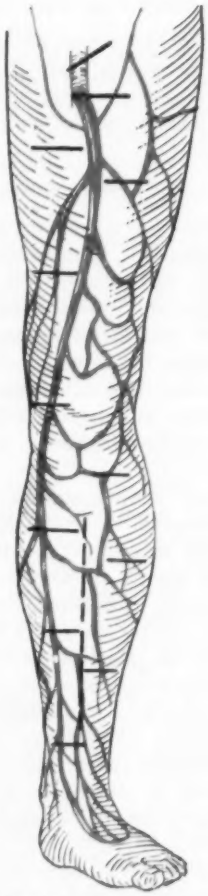


Fig. 1. Incisions commonly used for resection of primarily varicose veins. The dotted incision is used with incompetent perforating veins.

*Surgical treatment of primary varicose veins. Am. Surgeon 21:50-55, 1955.

On the day before operation, with the patient standing, the skin over the varicosities is scratched lightly. The scratch becomes erythematous and is easily seen at surgery. The operation is done after spinal or general anesthesia. After dividing the uppermost tributaries, the internal saphenous vein is severed and ligated at the bulb. Subfascial trunks and larger tributaries and plexuses are excised from above downward. Multiple short transverse incisions are used (Fig. 1).

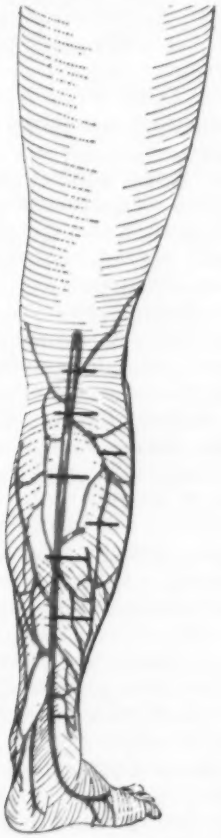


Fig. 2. Incisions used for resection of posterior primary varicose veins. The vertical incision (not shown) commonly extends posterior to and below the medial malleolus.

After the internal saphenous system varicosities are excised, the patient is rolled over to the prone position and the external saphenous varicosities are removed. The subfascial trunk is isolated below the knee to avoid unnecessary dissection in the popliteal space. Because of anatomic variations, excision is begun at the ankle (Fig. 2).

With severe or recurrent disease, incompetent perforating veins are important factors in hemostasis. Some perforators are obliterated in the excision of the main saphenous trunks but others remain that connect the deep veins with the secondary saphenous tributaries and the superficial veins with the muscular vessels. All incompetent perforating veins must be dissected and ligated, subfascially if possible.

Because considerable dissection along the fascial planes is necessary, long vertical skin incisions are used (Fig. 1). Chronic ulcers and scar tissue should be excised and the sites grafted.

Early activity and ambulation is easily accomplished if only one leg is operated on at a time. The limb is splinted by a dressing of fine gauze and elastic adhesive from the toes to just below the groin. After the sutures are removed, the leg is supported from the toes to the knee with a boot of gauze impregnated with Unna's paste until the skin is in good condition and swelling no longer occurs.

Breast Carcinoma in Males

CHARLES HUGGINS, JR., M.D., AND GRANTLEY W. TAYLOR, M.D.
Massachusetts General Hospital, Boston

*Radical mastectomy remains the preferred treatment for early malignant lesions of the male breast.**

CANCER of the breast in men is not common, and recognition of the disease may be delayed because neither physician nor patient is conscious of early signs.

Usually, the disease appears in older men, the median age being about 64 years. In most cases, an asymptomatic nodule of hard consistency is found beneath the nipple, although, on occasion, bleeding from the nipple, retraction, and pain may be the initial symptoms. Even at the first examination, about 70% of patients have axillary spread. Although the distribution of distant metastases is the same as in women, attachment to the pectoral fascia occurs early because of the paucity of adipose tissue in the male breast. Histologically, the tumor is indistinguishable in the two sexes.

Patients can be classified into 4 groups according to the stage of the disease:

- In stage A, the disease is limited to the breast with little or no axillary lymph node involvement. Neither ulceration nor fixation to the underlying pectoral fascia is found.
- In stage B, the local disease is more extensive, but no general spread is evident beyond the axilla.
- In stage C, the disease extends beyond the axilla and precludes cure by direct surgery.
- In stage D, the lesion is incurable and the patient is referred for terminal care.

Biopsy under general anesthesia with frozen section examination affords immediate opportunity to proceed with radical mastectomy. In the most amenable cases, about 35% of patients may live for five years after this procedure, while patients with ulceration and fixation of the skin almost never survive over twelve months. However, with more extensive disease, radical mastectomy should be done even though the chance of surgical cure is slight, since surgery will spare the patient a painful, necrotic, local tumor accumulation. Any operation short of radical mastectomy is attended by a high rate of local recurrence and should be abandoned. Recurrent local lesions, even when small, usually herald death with widespread metastases before two years.

Hormonal treatment with diethylstilbestrol is useful in prolonging comfortable existence in less favorable cases, and orchiectomy, with or without estrogen therapy, may give considerable relief of symptoms from widespread metastases.

*Carcinoma of male breast. Arch. Surg. 70:303-308, 1955.

Rigid and Flexible Artery Prostheses

CHARLES A. HUFNAGEL, M.D.
Georgetown University, Washington, D.C.

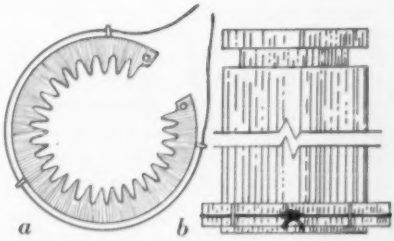
*Rigid methyl methacrylate tubes and flexible Orlon prostheses are suitable for replacement of diseased arterial segments.**

ALTHOUGH homografts are adequate for reconstruction of major arteries, a need exists for artificial blood vessels constructed of nonbiologic material which would be available in all sizes and shapes. The difficulties involved in securing and processing grafts of human or animal origin would also be obviated. The scope and incidence of arterial resection for both arteriosclerotic aneurysms and occlusive disease of the aorta have exceeded the supply of homografts.

RIGID PROSTHESES

For the successful use of a rigid arterial prosthesis, the following components should be taken into consideration:

- The material should be relatively biologically inert.
- Tensile strength must be adequate, that is, the prosthesis must be able to withstand normal body stresses and should not deteriorate harmfully.
- A tendency to resist thrombosis must be inherent in the material. The internal surface must be smooth, as sharp or irregular edges increase the likelihood of clotting.
- Junction between the tube and the vessel must be smooth. The leading edges of the tube should be thin and tapered, but not cutting, and must be inserted so that a sharp angulation of the tube with the vessels at the points of junction is not produced.
- The anastomosis must not cause necrosis of the arterial wall at the point of junction. To assure this, fixation is secured by multiple-point pressure on the circumference of the arterial wall, avoiding continuous pressure.



Methyl methacrylate tube, with toothed nylon ring [*a*] tied into position [*b*]

Rigid tubes of methyl methacrylate (Lucite, Plexiglas) appear to satisfy these criteria. Multiple-point fixation on the circumference of the arterial wall is provided by fitting a nylon ring, with teeth along the inner circumference, into a groove at the junction of the tube

*The use of rigid and flexible plastic prostheses for arterial replacement. Surgery 37:165-174, 1955.

and vessel (see illustration). A single ligature on the outer circumference of the nylon ring secures the anastomosis. The tube must fit accurately, or intimal tearing or stripping causes thrombosis.

FLEXIBLE PROSTHESES

In instances where a rigid tube is impractical, flexible prostheses of Orlon fabric meet the requirements of nonclotting, permanent patency, ease of handling, and lack of bleeding. Strands are uniform and smooth and are fairly nonreactive in tissue. A 75-by-100 or 100-by-100 weave of type-81 Orlon fiber is used. Tubes are made by sewing the material with a single seam, with slightly flared ends which are turned back as cuffs. Both straight and branched forms, including Y bifurcations, can be fashioned.

After thorough washing in a detergent and at least 3 rinses in distilled water to remove oil and other foreign matter which accumulate on the surface of the fiber, the grafts are autoclaved in the usual method for cloth and implanted by the everting suture technic. The grafts must be sufficiently taut to prevent wrinkling at the suture line, which may lead to clot formation. In about three to four months, the graft is covered completely on the inside with endothelium and has not deteriorated appreciably.

Resiliency and adaptability of grafts may be improved by development of seamless tubes, using a diagonal weave.

Orlon grafts were implanted in 15 patients with such conditions as aortic aneurysms or occlusions, traumatic or arteriosclerotic occlusions of the superficial and common femoral arteries below the inguinal ligament, and trauma to the brachial artery. No failures occurred, and no complications due to the graft resulted.

Valvular Restenosis after Commissurotomy

ROBERT P. GLOVER, M.D., JULIO C. DAVILA, M.D., THOMAS J. E. O'NEILL, M.D., AND O. HENRY JANTON, M.D., HAHNEMANN MEDICAL COLLEGE AND PRESBYTERIAN, EPISCOPAL, AND LANKENAU HOSPITALS, PHILADELPHIA, believe that mitral stenosis does not recur within five years after commissurotomy if the operation is properly performed.

A review was made of nearly 600 consecutive commissurotomies. No signs of restenosis are evident among the 7 patients who have lived the longest, four to five years, since the operation. In 31 instances, postmortem examinations show that death was not caused by closure of the valve; the longest survival period was three years.

The purpose of mitral commissurotomy is not only enlargement of the mitral orifice but the greatest possible degree of valvular mobility. Subvalvular dissection of fused and distorted chordae tendineae and papillary muscles improves valve function.

Does mitral stenosis recur after commissurotomy? Circulation 11:14-28, 1955.

Preservation of Anal Sphincter in Cancer

R. RUSSELL BEST, M.D.
University of Nebraska, Omaha

*The anal sphincter can be preserved in 2 types of rectosigmoidectomy for malignant growths of the lower sigmoid, rectosigmoid, and upper rectum.**

SINCE less than 1% of carcinomas of the lower colon have distal extrarectal lymph metastases or intramural bowel extension beyond 2 cm., the sphincter mechanism should not always be destroyed. An operation is adequate if the rectum is transected at least 2½ cm., and preferably 5 cm., below the apparent tumor and the abdominal and pelvic dissection is radical.

Abdominoperineal resection with sacrifice of the sphincter is necessary only when the carcinoma is 5 cm. or less from the external anal margin.

ABDOMINAL PROCEDURE

When the tumor is 10 cm. or more above the sphincter and not entirely below the peritoneal pelvic floor, abdominal dissection, resection, and anastomosis can be done (see illustration).

A transverse incision is made below the umbilicus and extended upward on the left. The marginal vessels of the descending colon are preserved.

After division of the rectum and anastomosis, a rubber drain, placed in the hollow of the sacrum, is brought out through an incision along the coccyx for dependent drainage. Decompression is accomplished with a catheter cecostomy, and a nasogastric tube is ordinarily not required.

A digital rectal examination is done after two weeks. If the anastomosis is palpable and admits the finger easily, function is probably adequate.

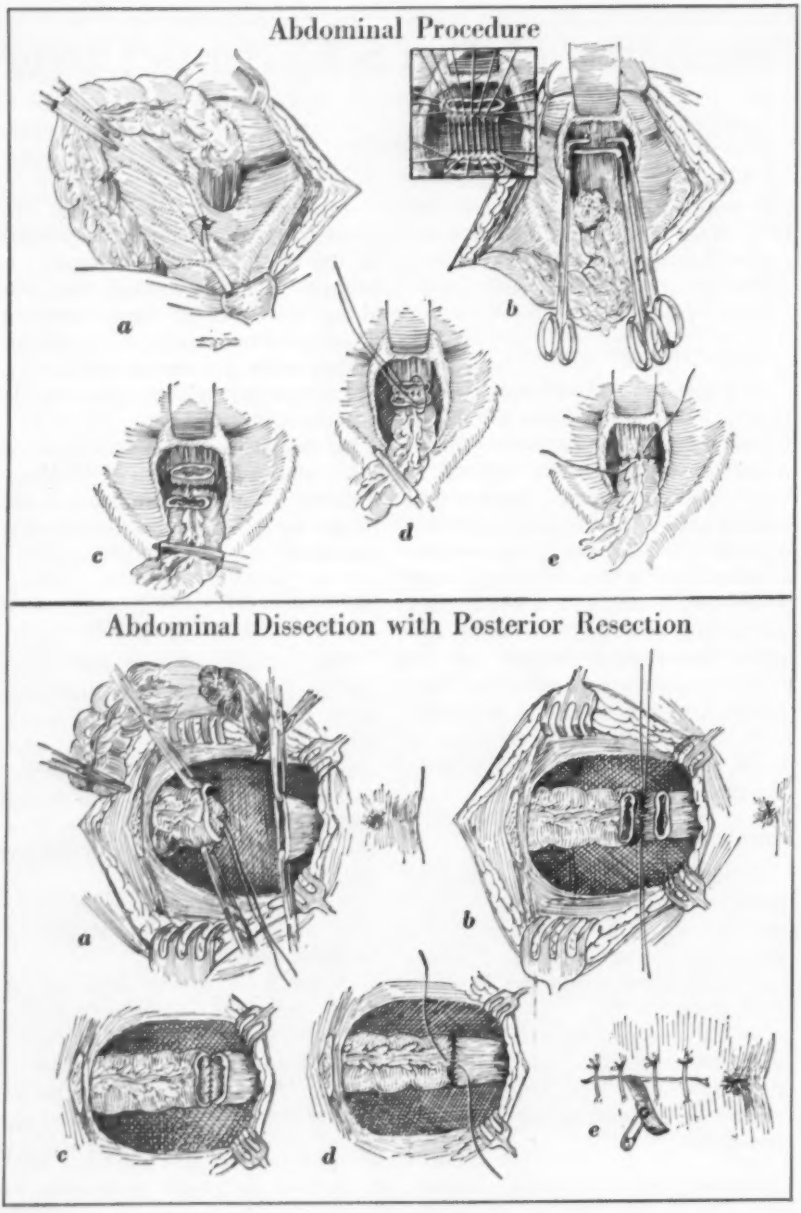
ABDOMINAL DISSECTION WITH POSTERIOR RESECTION

For lesions 5 to 10 cm. above the anal sphincter and usually entirely below the peritoneal pelvic floor, a satisfactory lateral node dissection cannot be performed through the abdomen, and a posterior resection of the fascia, levator muscles, and adjacent structures must be added.

The abdominal and pelvic dissection is done as for an abdominoperineal resection.

Since a cecostomy does not afford sufficient decompression, a temporary transverse colostomy is performed, and the abdomen is closed. With the patient in the left lateral position, the coccyx and segment of bowel are removed and

*Sphincter preserving operative procedures for cancer of the rectum, rectosigmoid, and lower sigmoid. Am. Surgeon 20:1264-1272, 1954.


Abdominal Procedure
a
b
c
d
e
Abdominal Dissection with Posterior Resection
a
b
c
d
e

anastomosis is accomplished (see illustration). Colostomy closure is done after a period of eight to ten weeks.

Sphincter control is adequate after either operation. As compared to abdominoperineal resection with permanent colostomy, sexual impotence is less than a quarter as common and recurrence rates and three- and five-year survival rates are about the same. Examination for recurrence is easily accomplished, and abdominoperineal resection can be performed secondarily.

¶ ACUTE PSYCHOSES may be precipitated by overdosage with amphetamine in persons with backgrounds of social maladjustment and psychopathy. Although a paranoid psychosis with visual and auditory hallucinations usually occurs, Morris Herman, M.D., and Simon H. Nagler, M.D., of New York University, New York City, report the development of a chronic schizophrenic state in 2 of 8 patients. Dosage varied from 250 mg. of Benzedrine taken only once to 250 to 500 mg. ingested daily for as long as a year. Recovery was usually complete within thirty-two days.

J. Nerv. & Ment. Dis. 120:268-272, 1954.

¶ ELECTROCONVULSIVE THERAPY can be given to patients formerly considered poor risks if succinylcholine chloride is administered as a muscle relaxant, report Burtrum C. Schiele, M.D., and Philip M. Margolis, M.D., of the University of Minnesota, Minneapolis. Atropine, 0.8 mg., is given thirty minutes before rapid intravenous injection of 10 mg. of succinylcholine to a fasting patient. Convulsive treatment is then begun in twenty-five to thirty seconds. Occasionally, prolonged apnea necessitates use of positive-pressure oxygen.

Minnesota Med. 38:1-4, 1955.

¶ MEPERIDINE (DEMEROL) HYDROCHLORIDE ADDICTION is increasing in frequency incident to the use of the drug in the treatment of chronic psychiatric and physical ailments. Robert W. Rasor, M.D., of Lexington and H. James Crecraft, M.D., of Louisville report that 144 persons addicted to the medicament were admitted yearly during 1950-53 to the U. S. Public Health Service Hospital, Lexington, compared with only 6 such patients in 1946-47. Nearly one-half of 457 persons admitted were physicians, nurses, or other individuals who were closely associated with the medical profession.

J.A.M.A. 157:654-657, 1955.

Atelectasis in the Newborn

IAN DONALD, M.D.
The Postgraduate Medical School of London

*Respiratory difficulties, especially in premature infants, are still the most frequent causes of death during the neonatal period.**

THE lungs of a newborn child may fail to expand because of [1] an inadequate airway; [2] inability of the child to make respiratory efforts as a result of prematurity, previous anoxia, or birth trauma; [3] structural lung immaturity; or [4] a soft, collapsible thoracic cage.

Atelectasis may be primary or secondary. With a primary condition the lungs never expand. Secondary collapse occurs after partial aeration. The baby cries and maintains a pink color, and roentgenograms give evidence of some aeration before death, but postmortem examination may show completely airless and solid lungs. Histologic study usually reveals hyaline membrane disease.

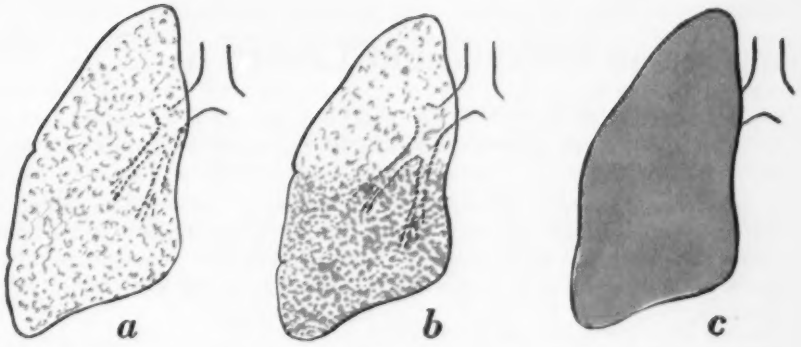
The hyaline membrane is an eosinophilic material lining the alveolar ducts. Many alveoli are sealed off and expansion is impossible. The origin of the disorder is obscure. At least one and one-half hours of respiratory effort is apparently necessary for distribution of the membrane. Postnatal pulmonary stasis, most common in the weak, premature infant, discourages the removal of inhaled amniotic fluid and meconium. Inspissation of the foreign substances probably favors membrane production. Infants with vigorous breathing in the first few hours of life are unlikely to be affected.

Hyaline membrane gives no pathognomonic symptoms or signs. The child often appears pink and vigorous at birth. A short interval later, the chest wall retracts. Grunting respirations and flaring of the alae nasi are noted. During the next few hours, respiration either improves or the infant becomes gray and apneic. Cyanosis is variable and increasingly severe. Death occurs within three hours to three days.

Radiology is invaluable for differentiating hyaline membrane from pneumonia or intraventricular hemorrhage. Radiologic evidence of the membrane may be divided into 3 stages. In the first stage, a uniform miliary mottling is seen (Fig. *a*); in the second, coalescent areas of atelectasis proceed to lobular or lobar consolidation (Fig. *b*); and in the third, nonaeration is total (Fig. *c*). The bronchial tree may remain well outlined. Survival is rare after the third stage is reached. If chest roentgenograms show full aeration, hyaline membrane is not likely.

Treatment includes aspiration of

*Atelectasis neonatorum. J. Obst. & Gynaec. Brit. Emp. 61:725-737, 1954.



Radiologic appearance of the 3 stages in the development of hyaline membrane

mucus and foreign material from the pharynx and stomach. Maintenance of body temperature and a supply of humidified oxygen are important. Various mechanical respiratory aids have been devised.

Results of a system of augmented respiration have been encouraging. Spontaneous respiratory efforts are assisted synchronously with the child's rhythm, even though irregular. Breathing against a machine is thus avoided. The infant's respiratory attempt lifts an inspiratory valve, deflecting a beam of light which operates a photoelectric mechanism. The respirator is triggered into action and inspiration is instantly amplified. Such treatment may be continued for two days. After this period, the infant will have an 80% chance of survival.

Protruded Lumbar Disks in Children

J. HUGH WEBB, M.D., HENDRICK J. SVIEN, M.D., AND ROGER L. J. KENNEDY, M.D., MAYO CLINIC AND FOUNDATION, ROCHESTER, MINN., believe that protruded intervertebral lumbar disks, although rarely occurring in patients under 16 years of age, should be suspected when low backache and sciatic pain are noted in a child. If other causes of symptoms can be excluded, myelography and surgical removal should be considered after a thorough trial of conservative measures.

The lesions do not differ significantly from those found in adults. Physical findings vary from slight limitation of back motion to severe spasm of erector spinae muscles, reflex changes, and neurologic defects. Trauma related to the onset of symptoms occurred in 3 of 5 cases observed.

Protruded lumbar intervertebral disks in children. J.A.M.A. 154:1153-1154, 1954.

Crying in Infants and Children

R. S. ILLINGWORTH, M.D.
University of Sheffield, England

*A baby should never be allowed to cry for prolonged periods of time except when the parent is trying to break a habit produced by mismanagement.**

CRYING is normally involuntary and is regulated by a cerebral center connected by association fibers and tracts with many parts of the brain and cord. Tears are not usually produced until 3 to 4 weeks of age. Shedding of tears does not occur until a few weeks later and also is involuntary.

Altered respirations, consisting of sudden deep inspirations with prolonged expiration, are associated with the facial changes of crying. A small child allowed to cry for a long time is apt to sob, and the sudden, jerky inspiratory movements due to glottic spasm continue at decreasing intervals long after actual crying has ceased. The baby also has generalized mass activity when crying, which disappears as the child grows older.

Crying is of different types, including the hoarse, gruff cry of a cretin, the hoarse cry with laryngitis, the shrill cry with intracranial disorders, the feeble cry with amyotonia or severe debilitation, and the whimper of a child who is seriously ill.

The cry of hunger or loneliness is probably quite different from that of pain, but how much of the difference lies in the intensity of crying is not clear.

CAUSES OF CRYING

The first three months—The chief cause is discomfort, and hunger is the most likely source. A baby does not cry from overfeeding. Discomfort is caused by localized collections of wind in loops of intestine, and high-pitched screams result. Crying may also be due to the infant's being too hot, cold, wet, or soiled.

Loneliness or a desire for attention is an important cause of crying in this period, and the baby becomes quiet when picked up and cuddled. Less important causes are various environmental stimuli. Crying of a baby in a nursery does not cause the other infants in the room to cry.

The older baby—The most important cause of crying in this period is boredom. Crying from boredom is often mistakenly thought to be caused by intestinal wind or hunger. Forceful efforts at training may also cause crying. Night crying is basically due to the baby's desire for company of the mother. Fatigue is also an important etiologic factor.

*Crying in infants and children. Brit. M. J. 4905:75-78, 1955.

The older child—Most crying is related to the child's developing ego and negativism or to a need for love and security. The amount of crying is always increased by fatigue, boredom, or hunger. Crying when awakened is characteristic of the 2½- to 3-year-old child and is apparently only a developmental feature. The cause of crying can always be found, though often with difficulty.

TREATMENT

The cause should be sought and the child comforted and soothed. The only exception is when a bad habit is being broken. Allowing a small child to cry for prolonged periods may cause illness or psychologic harm and may lead to a habit not easily broken.

No harm results from picking up a crying infant. If picked up reasonably often, demanding babies settle down in a few weeks and stop claiming so much attention from the parents.

Crying at night often becomes a habit in the older baby and must be dealt with firmly. The infant should not be picked up if only whimpering or crying from fatigue and about to go to sleep. However, a baby in pain from colic or teething should certainly be comforted and soothed.

Spoiling will result from constant picking up and playing with a happy and contented infant.

Boron Absorption from Borated Talc

RUSSELL S. FISHER, M.D., HENRY C. FREIMUTH, PH.D., KATHLEEN A. O'CONNOR, AND VIOLA JOHNS, M.D., UNIVERSITY OF MARYLAND AND DEPARTMENT OF MENTAL HYGIENE, STATE OF MARYLAND, BALTIMORE, studied the effect of boric acid in talc used on infants and children and report that the talc has no significant effect on the boric acid content of the blood.

A group of about 60 mentally retarded infants aged 5 months to 7 years were observed. All of the children were required to wear diapers because of inadequate bowel and bladder control. A talc powder containing about 5% of boric acid was used after each diaper change and was applied freely to other areas of the body as specific skin disorders warranted. The average monthly usage of the powder was 168 gm. per infant. Blood samples were taken every two months for a year and were analyzed for boric acid content. Before the study was started, blood samples were collected from each of the infants to be used as base levels.

The average boron concentration for the entire experimental period was 0.0125 mg. per 100 cc.; the highest recorded level was 0.075 mg. per 100 cc. Blood concentrations of boric acid in individual infants often varied considerably.

Boron absorption from borated talc. J.A.M.A. 157:503-505, 1955.

Thyroid Disorders in Childhood

CARL WEIHL, M.D.
Children's Hospital, Cincinnati

*Proper therapy of juvenile thyroid disorders is essential because of the effects of the thyroid hormone on cell metabolism, growth, and development.**

THE thyroid hormone exerts an indirect effect on growth in childhood by alteration of the adrenocorticotropic, gonadotropic, and growth hormones of the anterior pituitary. Deficiency of thyroid hormone causes small stature, signs of adrenocorticotropic deficiency, and slowing of sexual development. Hyperthyroidism, on the other hand, has little effect on growth hormone production but may interfere with normal gonadotropin production.

DIAGNOSIS

The changes of hypo- or hyperthyroidism are often clinically apparent. Hypothyroidism is accompanied by anorexia, inertia, constipation, bradycardia, and circulatory impairment. Diminished growth and development result in delayed closure of the fontanels and late appearance of deciduous teeth. With cretinism, both motor and intellectual functions are decelerated. Myxedema, dry skin, pot belly, umbilical hernia, and large tongue may also be noted.

Hyperthyroidism, an uncommon disease during childhood, is manifested by enlargement of the thyroid gland, tachycardia, increased appetite, sweating, heat intolerance, weight loss, emotional lability, and exophthalmos. Onset is usually between the seventh and thirteenth years.

Several laboratory methods are available for assessment of thyroid activity. Delayed skeletal maturation, usually found with hypothyroidism, is easily evaluated by the 67 ossification center survey. Roentgenographic studies will also reveal epiphyseal dysgenesis.

The radioactive iodine uptake determination requires the use of a Geiger counter or gamma-detecting scintillation counter. Iodine uptake and excretion are fairly reliable indicators of thyroid function. In the euthyroid patient, 30% of the ingested radioiodine appears in the thyroid in twenty-four hours; about 65% is excreted in the urine. In the hypothyroid patient, less than 10% appears in the gland, and 70 to 90% in the urine. The hyperthyroid individual traps up to 70% in the gland and excretes about 20%.

Measurements of plasma protein-bound iodine are reliable but difficult to obtain. Levels vary from 4 to 8 μg. per 100 cc. Values up to 12 μg. per 100 cc. are found in

*The thyroid gland. Ohio M. J. 50:1044-1047, 1954.

the newborn. In athyrotic persons, the value seldom exceeds 3 μg.

Serum cholesterol determinations are significant only if elevated above 280 mg. per 100 cc. Unusually high levels are found in about 50% of hypothyroid patients. Cholesterol rise within four months after cessation of thyroid therapy is a diagnostic aid. The test also shows the fall from high to normal levels during thyroid therapy.

Basal metabolic rates are not easily obtained in children under 8 years old. Wide variations in test conditions limit reliability.

TREATMENT

The child with hypothyroidism should be treated as early as possible with 60 to 90 mg. of U.S.P. thyroid per square meter of body surface daily. One-fourth of the recommended dose is given the first two weeks, one-half the next two weeks, and three-fourths after four weeks. At the end of six weeks the full daily dose is tried. The maintenance dose should eliminate signs of hypothyroidism without precipitating toxicity.

Hyperthyroidism is managed with iodides, thiouracil derivatives, or, in selected cases of severe thyrotoxicosis, subtotal thyroidectomy. Often the disease runs a cyclic, self-limited course and needs no treatment.

For slight hyperthyroidism, 0.3 cc. of saturated potassium iodide solution is administered daily for six to twelve months after symptoms have disappeared. For more severe disease, propylthiouracil, 120 to 175 mg. per square meter of body surface per day, divided into three doses, is given every eight hours. In some cases, because of undesirable side effects of thiouracil therapy, subtotal thyroidectomy may be preferable.

Prognosis in children with thyrotoxicosis is usually favorable. However, hypothyroidism in childhood, even with adequate therapy, has a poor outlook. Only 25% of patients with disease before 2 years of age have an I.Q. above 80, while 90% of those whose symptoms appear after the age of 2 will have an I.Q. above 80.

GOITER

Neonatal thyroid enlargement ordinarily disappears shortly after birth. Endemic goiter in infants born of mothers with gland enlargement may be accompanied by hypothyroidism. An adolescent goiter may be treated with iodine or U.S.P. thyroid.

¶ PINWORM INFESTATION is most effectively treated by simultaneous administration of oral medicaments and rectal suppositories. F. Pearson Allen, Jr., M.D., of Memphis finds that *Enterobius vermicularis* was eradicated within twenty-eight days in 97% of 77 children when Antepar, gentian violet, or Diphenan was given in calculated dosage by mouth and 0.25% gentian violet in a polyethylene glycol base containing 2% benzocaine was given by rectum.

J. Pediat. 46:155-157, 1955.

Management of Salicylate Poisoning

F. H. HARVIE, M.D., AND R. B. SINGER, M.D.
University of Pennsylvania, Philadelphia

*Repeated serum electrolyte determinations are invaluable in the proper management of severe salicylate poisoning.**

OVERDOSAGE or accidental ingestion of salicylates is a common cause of poisoning in children. Methyl salicylate (oil of wintergreen) is especially dangerous; 1 tsp. is equivalent to 12 ordinary acetylsalicylic acid tablets and is much easier to swallow. Local methyl salicylate is of questionable therapeutic value and therefore has no place in a home with small children.

Absorption of salicylate begins promptly after ingestion. Single doses are largely excreted in the urine in fifteen to thirty hours. Sodium bicarbonate increases the rate of absorption and excretion and reduces plasma levels. Since methyl salicylate is absorbed more slowly, gastric lavage is worth while even several hours after ingestion.

Large doses of salicylates cause stimulation, then depression of the central nervous system. Hyperpnea is apparently due to central respiratory stimulation. Excitement, disorientation, stupor, respiratory failure, and convulsions may occur. Less serious symptoms are headache, tinnitus, deafness, vertigo, vomiting, and diaphoresis. Death is most frequently caused by central respiratory depression.

Hemorrhage is apparently due to vasodilatation and decreased prothrombin. Dicumarol complements this action, but 1 mg. of vitamin K will counteract the effect of 1 gm. of salicylate.

Ketosis, frequently seen with infection or dehydration in children, may lead to diagnostic confusion. In the commonly used ferric chloride test for ketonuria, salicylate has a violet color, while acetoacetic acid is bluish-red. Boiling volatilizes the ketones but not the salicylates.

The first effect of salicylate intoxication is respiratory alkalosis. Disturbances in acid-base equilibrium are most extreme in infants and small children. Hyperventilation induces elevated serum *p*H and low blood carbon-dioxide levels. With severe poisoning, alkalosis is soon obscured by a superimposed primary metabolic acidosis. Plasma buffer base falls, and serum *p*H is lowered to the acid range. The change is probably produced by accumulation of organic acid metabolites, sometimes aided by ketosis.

Treatment is initiated with gastric lavage. Fluids are given, parenterally if necessary, to correct dehydration and promote renal excretion. Carbohydrate helps prevent the ke-

*Salicylate poisoning. Am. J. Dis. Child. 89:149-158, 1955.

tosis of starvation. If convulsions appear, oxygen should be tried, since some anticonvulsants, notably paraldehyde and barbiturates, enhance the depressive action of salicylates. Alkalotic tetany may be relaxed with 5% carbon dioxide inhalation or intravenous calcium gluconate. Plasma or whole blood for shock, vitamin K in large doses, and ascorbic acid are also given.

Determinations of blood chemicals are necessary to avoid misinterpretation of the acid-base pattern. Blood *p*H estimates are almost obligatory. Buffer-base values aid assessment of the low carbon-dioxide levels and elevated *p*H. Clear separation of the respiratory from the metabolic and renal factors places treatment on a rational basis.

Full correction at one time to a theoretically normal blood electrolyte equilibrium is never wise in infants. The dose of alkali used to combat acidosis should always be less than the amount calculated to restore carbon-dioxide content to normal. A volume factor of one-fifth or one-third of body weight is safer than the commonly used two-thirds of body weight.

If frequent measurements of *p*H, buffer base, and carbon-dioxide pressure and content are possible, therapy can readily be adjusted to changing circumstances. Without laboratory aids, the risk of acidosis from salicylate poisoning is less than that of overtreatment with alkali. Misjudgment may cause tetany or respiratory depression.

Differential Diagnosis of Leukemia

STEPHEN D. MILLS, M.D., MAYO CLINIC, ROCHESTER, MINN., states that acute leukemia should be suspected when a child has [1] fever, anemia, and enlargement of the liver, spleen, and lymph nodes, or [2] purpura or bleeding with leukocytosis and increased lymphocytes. However, because of extreme lability of the blood in young children, careful study of peripheral blood and bone marrow is necessary for accurate diagnosis.

Of 44 children believed to have acute leukemia observed during 1949-52, all but 4 were under 5 years of age. In each case, a disorder other than leukemia was found responsible for illness. Most of the children had acute infections causing unusual increases in total leukocytes, lymphocytes, or both; 5 had infectious mononucleosis, 6 nutritional anemia, and 2 acute benign lymphocytosis. Other disorders included rheumatoid arthritis, infantile cortical hyperostosis, eczema, urticaria pigmentosa, hepatoma of the liver, and bleeding from the bowel.

The collagen diseases, congenital syphilis, malignant neoplasms with metastases to bone, and poisoning from heavy metals may also be mistaken for leukemia.

Conditions mistaken for leukemia in children. Minnesota Med. 37:444-447, 1954.

Insulin Needs of Diabetic Children

HELEN G. KELLY, M.S., P. TIRUMALA RAO, M.D.,
AND ROBERT L. JACKSON, M.D.
State University of Iowa, Iowa City

*Changes in insulin requirements of boys and girls with well-controlled diabetes mellitus are related to growth.**

In order to maintain normal growth of children with diabetes and to control the disease, insulin needs at varying ages should be known.

Prediction of future needs helps allay fears of the child and parents, who may assume that the disease is growing worse since larger doses of insulin are needed in succeeding years. Also, degree of hypoinsulinism of a patient can be evaluated by comparison of insulin dosages and growth with similar values for a group of diabetic children.

A study of the serial insulin requirements and growth of 48 well-controlled juvenile diabetics illustrated that the age of onset of the disease does not materially influence insulin requirements.

Need for insulin generally decreases rapidly to a low intake for a few months after initial regulation and metabolic restoration. After the sudden initial fall, the requirement increases at a rapid rate for another short period. Then the insulin requirement is fairly constant if the caloric intake is fixed.

During the early period of therapy, the child's weight increases rapidly but height remains almost stationary. Within a short period, the rate of growth in height accelerates and concurrently the insulin requirement increases, eventually attaining almost a constant ratio with body weight.

Growth patterns of boys and girls are similar up to 10 years of age. The smooth increase of insulin dosage reflects the uniform growth in the midchildhood period. Boys need more insulin than girls because of greater body mass. Requirements increase rapidly after 10 years of age for girls and 12 years for boys with the prepubescent growth spurt and then decrease.

Good control of the disease is difficult to obtain and maintain during the early months of treatment because the insulin and nutritional requirements change concurrently, with the pronounced alterations in weight and height. The rate of change depends on whether onset of the disease is in midchildhood or concomitant with prepubescent growth. After the period of changing body composition, a definite pattern is established.

As adulthood is reached, therapy and diet must be adjusted.

*Insulin requirements of children with diabetes mellitus maintained in good control. Am. J. Dis. Child. 89:31-41, 1955.

Chondromalacia of the Patella

IRVIN CAHEN, M.D.
Louisiana State University, New Orleans

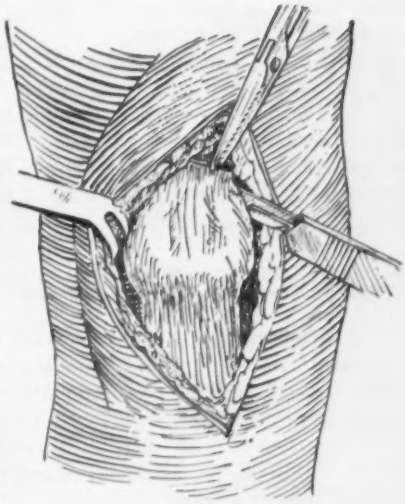
*Degeneration of the patella is a frequent cause of knee disability and often necessitates chondrectomy or patellectomy.**

TRAUMA is the commonest cause of chondromalacia of the patella. Though persons of any age may be affected, the disease is most common among young adults.

Pathologic changes consist of circumscribed degeneration of the articular surfaces of the patella with softening and fibrillation of the cartilage. As the disease progresses, the cartilage is thinned and the articular surface erodes. In the chronic phase, the osseous structures are exposed and show various degrees of sclerosis and osteophytic formation.

The chief symptom is pain central to the patella associated with weakness of the leg, especially when walking up and down stairs or on uneven ground. Stiffness, catching of the knee, and crepitation are also reported.

Examination reveals that pain can be aggravated by compression of the patella. When the patient is supine with the knee and hip flexed, extension of the leg may elicit a grating sensation as the patella slides over the femoral condyles. If joint effusion occurs, the sensation of crepitus may be diminished. Other physical signs are limited motion of the knee joint and atrophy of the thigh.



Removal of the patella

Aspirated synovial fluid may show increased clouding or flecks of cartilage but probably only when disease is chronic. Roentgen-ray examination is not helpful.

Conservative treatment consisting of restriction of motion and local physical therapy may be adequate for slight involvement. If symptoms persist over a long period of time or are progressive, arthrotomy is done.

The knee joint is entered through a medial parapatellar incision. Since

*Chondromalacia of the patella. J. Louisiana M. A. 107:19-24, 1955.

chondromalacia frequently coexists with other derangements, the joint is carefully examined. Treatment depends upon the degree of degenerative change. The degenerative cartilage is excised if involvement is moderate, but complete removal of the patella is necessary for severe disease (see illustration).

The patient should remain in bed and mobility is restricted for eight days postoperatively. Pressure bandages are utilized for three days, and quadriceps exercises are begun in two days. Skin sutures are removed on the eighth or ninth day.

The patients are instructed to use crutches for the first two weeks. Weightbearing is permitted if discomfort does not ensue. Physiotherapy is instituted when crutches are discontinued, and recovery is complete in eight to ten weeks.

If splint fixation is employed, the joint is immobilized for two weeks.

Of 150 persons who had arthrotomy of the knee joint, 32 had chondromalacia of the patella. The patella was completely removed in 5 instances.

Soft-Tissue Tumors of the Sole

RAYMOND A. ALLEN, M.D., LEWIS B. WOOLNER, M.D., AND RALPH K. GHORMLEY, M.D., MAYO CLINIC AND FOUNDATION, ROCHESTER, MINN., report that plantar fibromatosis (see illustrations) is occasionally associated with Peyronie's disease, knuckle pads, keloids, and firm subcutaneous nodules in ligamentous tissues elsewhere in the body.

Plantar fibromatosis usually occurs in the fourth decade and is more common in men than in women. The course is ordinarily long and slowly progressive. In most cases, the lesion is relatively asymptomatic. A few patients may have slight, infrequent pain.

Recurrence is common after surgical excision. Metastases do not occur and the lesion never becomes malignant.

Fibromatosis may occasionally be mistaken histologically for a malignant neoplasm because of actively proliferating fibroblasts, cellular variability, mitotic figures, and apparently invasive properties.

Soft-tissue tumors of the sole: with special reference to plantar fibromatosis. J. Bone & Joint Surg. 37-A:14-26, 1955.

Chronic Subdural Hematoma

JAMES L. POPPEN, M.D.
Lahey Clinic, Boston

*Head injuries initially thought to be slight may result in serious intracranial hemorrhage requiring surgical evacuation, particularly in older persons.**

THE incidence of chronic subdural hematomas is highest in the fifth and sixth decades, suggesting that the veins forming a bridge between the cortex and the sagittal sinus are more susceptible to slight trauma (Fig. 1).

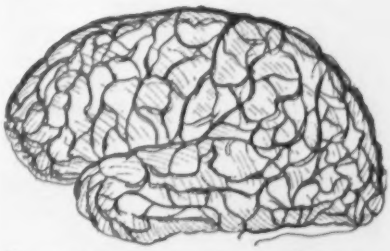


Fig. 1. Venous network over the cortex and sagittal sinus

Sometimes, patients cannot recall having had head injury. Frequently, if remembered, trauma is described as trivial. Patients with convulsions may sustain a hematoma as a result of a fall during a seizure and not remember the incident.

After injury, the patient begins to have headaches, continuously or at intervals, which increase in intensity, often in spite of medication. Some change in mental status usually occurs, such as irritability or queerness; sometimes, severe changes require psychiatric hospitalization. Lapses into coma, even without objective intracranial pressure phenomena, are frequent.

When first seen, the patient may be in a disturbed state of consciousness varying from confusion and disorientation to deep coma, and brain tumor may be suspected. Most patients have some objective neurologic signs. Pupils are frequently abnormal in size, but this is not a reliable means of determining on which side the hematoma is. Unilateral weakness and spasticity are also seen but do not accurately localize the tumor, since the patient may have a hematoma on either side or even have bilateral hematomas. Bilateral papilledema is not common.

Other findings occasionally seen include nystagmus, unilateral ptosis, lateral rectus paralysis, and limitation of upward gaze. Examination of spinal fluid may show normal or increased pressures. When ventricular fluid is examined, total protein is uniformly elevated.

Roentgenograms may show displacement of the pineal body or, occasionally, a skull fracture. Air studies usually will reveal the condition, and arteriographic examina-

*Chronic subdural hematomas. Geriatrics 10:49-51, 1955.

tion, particularly in the anteroposterior view, is also helpful.

Most chronic subdural hematomas that have become liquefied can be satisfactorily drained through parietal burr openings. After the clots are washed out, a rubber catheter is inserted into the cyst cavity and allowed to remain for twenty-four to forty-eight hours to facilitate drainage (Fig. 2). Occasionally, turning of a bone flap may be necessary to evacuate an organized hematoma and to treat the underlying cause.

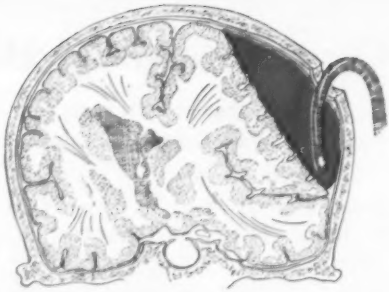


Fig. 2. Drainage of subdural hematoma

Prognosis is good if the hematoma is due to a head injury and is treated surgically before medullary decompensation occurs.

Spasm of the Facial Nerve

MERRILL C. O'DONNELL, M.D., SANTA MONICA, CALIF., states that hemifacial spasm should be differentiated from facial tic, a compulsion neurosis. A disease of adult life, spasm is worse under stress and occasionally occurs bilaterally.

The condition is manifest by clonic and occasionally tonic contractions of the muscles supplied by the facial nerve. The contractions usually begin in the orbicularis oculi and spread to other muscles innervated by the facial nerve. Contractions are irregular and involuntary, although trigger action, such as blinking the eyes or blowing out the cheeks, may cause spasm. The contractions may be severe and sudden, involving the entire musculature of the seventh nerve or may consist of minute twitchings of one or more of the muscles.

Although the etiology is unknown, tissue damage apparently results from ischemia. Since such conditions as aneurysm of the basilar artery may sometimes accompany hemifacial spasm, skull roentgenograms, angiograms, tomograms, and electroencephalograms should be made to reveal organic lesions.

No definitive therapy is available. Sedation, vasodilatation, intravenous procaine, and stellate blocks are not always effective. Neurolysis or sectioning of facial nerve branches most productive of spasm may be helpful, but sequelae such as facial paralysis, tinnitus, and deafness are common.

Hemifacial spasm: an affection of the facial nerve. Ann. Otol., Rhin. & Laryn. 62:969-978, 1953.

The Anesthetist and the Burned Child

D. W. SHANNON, M.B.
Royal Hospital for Sick Children, Edinburgh

*An experienced anesthetist is required before and during operation to assure adequate care of a seriously burned child.**

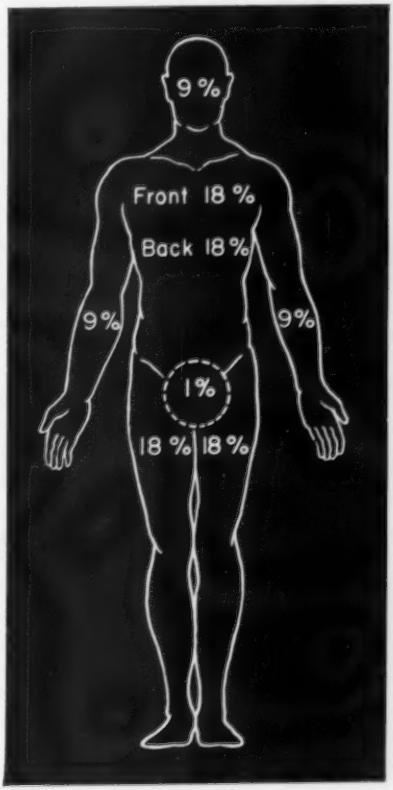
WHEN a child has been severely burned, expert coordination of the surgical team is necessary to prevent or treat shock, prepare the burned surface for grafting, relieve pain, and maintain metabolic balance.

The loss of fluids and red blood cells after a burn causes oligemic shock and anoxia. Treatment should be directed at easing the burden on vital systems by [1] increasing the available oxygen supply, [2] improving transport of oxygen to the tissues, and [3] reducing the demand by the tissues.

In extensive burns, massive destruction of red cells and loss of hemoglobin reduce the total oxygen capacity of the circulating blood. In such cases, half the total intravenous replacement fluid should be given as whole fresh blood, the other half as equal parts of saline solution and plasma. The amount of replacement fluids must be determined individually and may be based on the extent of the burn (see illustration) in relation to the age of the patient.

However, this amount replaces only the fluid lost, and additional fluids must be administered to provide for normal requirements of the child.

While blood and fluid are being replaced, the tension and volume



Guide for estimation of extent of burn

*An anaesthetist looks at a burnt child. Lancet 268:111-115, 1955.

of oxygen in the lungs must be maintained. This is best achieved by a patent airway and minute pulmonary ventilation.

Obstruction of the airway by laryngeal edema may require tracheotomy or bronchoscopic aspiration. Crusting of secretions in the nasal vestibules forces mouth breathing. Thick, viscid postnasal secretions may obstruct the laryngeal region and intensify respiratory embarrassment. Overloading the body with excessive replacement of fluids must be avoided because the resultant transudate in the alveolar spaces decreases the oxygen supply.

The tension and the volume of oxygen in the lungs depend on the integrity of the respiratory center and the efficiency of the respiratory muscles. Opiates can relieve rapid ineffective breathing. Heavy blankets, constricting bandages, and a high Trendelenburg position should not be allowed to interfere with breathing.

Oxygen is administered to all children with more than 30% body surface burns or with reduced pulmonary ventilation and peripheral circulatory failure. The most effective method of administration is through an intranasal catheter with several holes in the last inch to disperse the gas. Oxygen is delivered through a humidifier at a flow rate of 2 to 3 liters per minute. Once every twelve hours the tube must be removed and replaced through the alternate nostril.

Oxygen demand by the patient must be reduced by handling the patient as little as possible and by relieving anxiety and restlessness with depressant drugs.

Before treatment of the burn, the anesthetist should assess the clinical state of the patient; the nature of the operation and the metabolic and physiologic disturbances associated with it; and the hazards of the particular anesthetic technics to be used.

Local treatment, such as cleansing and application of dressings, can be done with diacetylmorphine hydrochloride or low concentrations of cyclopropane. The patient's condition may deteriorate after one to two weeks when the sloughs begin to separate and the eschar must be removed for grafting. Expert anesthetic judgment is necessary to treat seriously ill patients preparatory to surgery.

All patients receive atropine as preanesthetic medication. To alleviate fear in apprehensive children, quinalbarbitone sodium is given by mouth before entering the operating room.

The anesthetic agent should produce a rapid, smooth induction, free from coughing, struggling, and crying. The concentration of oxygen should be high in order to satisfy therapeutic and metabolic demands.

Cyclopropane is preferred for children and should be administered with circle absorption or, in children less than 3 years of age, with a to-fro absorption.

Endotracheal intubation is used when the burns involve the face, head, neck, and dorsal surfaces and for any child with respiratory embarrassment.

Radiocobalt for Bladder Tumors

FRANK HINMAN, JR., M.D., JOHN W. SCHULTE, M.D.,
AND B. V. A. LOW-BEER, M.D.
University of California, San Francisco

*Intracavitary irradiation with radiocobalt frequently destroys urinary bladder lesions that are not deeply infiltrating.**

THE radioactive cobalt bead, 0.5 cm. in diameter, presents practically a point source of radiation. From such a source, ionizing radiation can be delivered uniformly to the mucosal surface of the spherical bladder as well as into the walls.

The treatment technic consists of placing a radiocobalt bead in the central channel of a balloon catheter so that the bead is held at the geometric center of the bladder when the bag is inflated. The catheter has special perforations that permit the outflow of urine.

For eradication of carcinoma of the bladder, a tissue dose in the range of 7,000 to 8,000 r delivered over a period of fifty to sixty days may be adequate. For transitional cell carcinoma of the bladder, approximately 3,000 to 4,500 r should be given over a forty-day period. When the lesion is spread beyond the walls of the bladder, radiation treatment is employed only to stop some of the distressing symptoms such as bleeding, inflammation, edema, and pain. A palliative beneficial effect may be achieved with doses varying between 300 and 1,500 r over a period of one to three weeks.

Intracavitary irradiation with radiocobalt alone or in combination with local x-ray treatment was used in 35 patients with tumors of the urinary bladder in various stages of invasion. Lesions were destroyed in 4 of 9 patients with tumor confined to the mucosa. Most infiltrating lesions were only temporarily arrested even with combined intracavitary and external irradiation. Of 14 patients with tumors involving the bladder muscle, 3 were free of disease twelve to twenty-three months after the treatment and 6 showed temporary arrest. Tumor persisted after irradiation in 5 of the patients.

Radiation cystitis and bladder contraction frequently result from therapy. When tumor eradication or arrest is the goal of treatment, untoward effects of radiation must be anticipated as unavoidable sequelae of any intensive radiation. If palliation is the aim, the dose should be limited to avoid untoward effects. With palliative treatment, bleeding and pain may be checked for weeks or even months. Treatment may be repeated at intervals as necessary.

*Further experience with intracavitary radiocobalt for bladder tumors. J. Urol. 73:285-291, 1955.

Safety of Perineal Prostatectomy

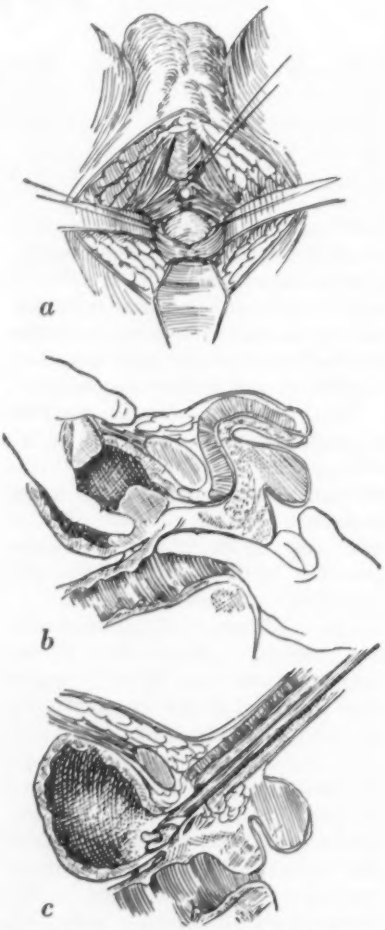
EDWIN DAVIS, M.D., AND LEROY W. LEE, M.D.
University of Nebraska, Omaha

*Uneventful convalescence with primary healing, short hospitalization, and excellent functional results can be expected after perineal prostatectomy.**

IMPROVEMENTS in technic and instruments and better methods of anesthesia, hemostasis, and antisepsis have changed perineal prostatectomy from a traumatizing to a safe procedure. Education of the public has also improved the prognosis since hazards of delay, including severely distended bladder and mental disorientation, are practically eliminated.

Selection of the route for prostatic resection depends on the size of the organ, evidence of malignant disease, and, to a lesser extent, the skill of the surgeon. The perineal approach is recommended for moderate to large benign hyperplasia, early intracapsular carcinoma without metastases, and prostatic calcification (Fig. *a*).

The suprapubic approach should be employed when the patient has moderate to large benign hyperplasia with massive vesical hemorrhage, ankylosis of the hips, impassable urethral stricture, or perineal scar tissue (Fig. *b*). Transurethral resection is advisable for



Perineal [*a*], suprapubic [*b*], and transurethral [*c*] approaches for prostatic resection

*Progress in perineal prostatectomy: results in 2050 consecutive patients. J. Urol. 73:142-154, 1955.

small benign hyperplasia, median prostatic bar, Mercier's bar, or advanced prostatic carcinoma (Fig. *c*).

The perineal approach permits precise dissection with clear visualization and accurate hemostasis. Anatomic restoration is accomplished by plastic closure.

Preoperative preparation includes vasectomy, nonprotein nitrogen determinations, and roentgenographic study. Cystoscopic examination is sometimes necessary to establish the diagnosis. Patients should be without fever and have good appetites. If the patient has large amounts of residual urine or nonprotein nitrogen is elevated over 40 mg., surgery is delayed and bladder drainage and therapy with forced fluids are instituted.

The necessity for haste during surgery is eliminated by continuous caudal anesthesia. An initial amount of 80 cc. of 0.5% Cyclaine is usually adequate but may be supplemented.

Perineal prostatectomy produces less postoperative discomfort than suprapubic or transurethral operations. Patients are out of bed on the first or second postoperative day, and the retention catheter, perineal drains, and sutures are removed on the seventh day. The average hospitalization period is about eleven days; some patients may be discharged from the hospital on the eighth day.

Except for vascular accidents, which are probably unrelated, severe complications after prostatic surgery have been eliminated or greatly reduced. Cerebral, coronary, and pulmonary disturbances cause half of the deaths among perineal prostatectomy patients.

Clear visualization, suture ligation, and plastic repair prevent immediate postoperative hemorrhage. Massive secondary bleeding is infrequent with use of sulfonamides and antibiotics.

A plastic closure and antibiotics will prevent perineal urinary fistula. Postoperative urethral stricture is rare. Acute suppurative epididymitis is eliminated by vasectomy.

Incontinence, usually transient, may occur after prostatic surgery performed through any route. The chief etiologic factor is probably weakness or atrophy of the external sphincter fibers rather than mechanical injury of muscle fibers or nerve supply. Control is regained more rapidly if the patient exercises the muscles by attempting to stop and start the urinary stream during micturition. The patient is also instructed to tighten the sphincter ani and perineal muscles between urinations.

Less frequent causes of postoperative incontinence are concurrent neurogenic dysfunction and senile, physical, and mental debility. Suspected cord lesions should be confirmed preoperatively by neurologic consultation and cystometrographic study.

Among 2,050 consecutive perineal prostatectomy patients treated during a period of thirty-four years, the youngest was 40 years of age and the oldest, 104. The overall mortality was 2.9%. Only 24 deaths were directly related to prostatic surgery, 30 were doubtfully related, and 6 were unrelated to the surgical procedure.

Management of Prostatic Obstruction

WILLIAM P. HERBST, JR., M.D.
Georgetown University, Washington, D.C.

*Over half of all patients with prostatic obstruction can be treated by transurethral resection, perineal prostatectomy, or suprapubic prostatectomy.**

ALMOST any person with prostatic obstruction who is not moribund can be treated with catheterization or with some type of prostatic surgery.

Factors responsible for the low mortality and morbidity associated with modern management of prostatic obstruction include antibiotics, antihistamines, stress compensation substances, vitamins, blood transfusions, and good anesthesia.

Catheterization—An indwelling urethral catheter is usually satisfactory in patients for whom surgery is not justified. Reaction of the urethra and bladder to an indwelling catheter is extremely variable. Some patients will tolerate a catheter indefinitely with comfort and no encrustation in the lumen or around the distended bulb; others cannot tolerate a catheter more than a few days. In the latter patients, suprapubic cystostomy or frequent changes of catheters and the use of antibiotics, vitamins, and general supportive measures may be necessary. If the amount of residual urine or discomfort is not too great, small doses of estrogens may be administered.

Simple catheterization often disturbs an infected prostate and causes release of bacteria into the blood stream. Chemotherapy and antibiotics prevent this phenomenon from becoming serious.

Transurethral resection—Patients with urethras of normal caliber who have [1] inoperable prostatic carcinoma with retention, [2] a small, cicatricial, infected, inflammatory, obstructing gland, [3] ball-valve obstruction, or [4] median bar obstruction should be treated with transurethral resection. The procedure is also done when the prostate is moderate in size and the general condition of the patient is good. When the bladder will not empty completely because of a neurogenic condition, graded resection can be performed.

Possible complications of transurethral resection include postresection urethral stricture, recurring infections of the remaining prostatic tissue, and anuria.

Perineal prostatectomy—Patients with a small or moderate-sized prostate, open perineum, prostate close to the perineum, or blocked suprapubic approach are treated with simple perineal prostatectomy. The radical procedure is performed for a perineally accessible, cancerous

*Factors involved in the management of prostatic obstruction. J.A.M.A. 157:579-580, 1955.

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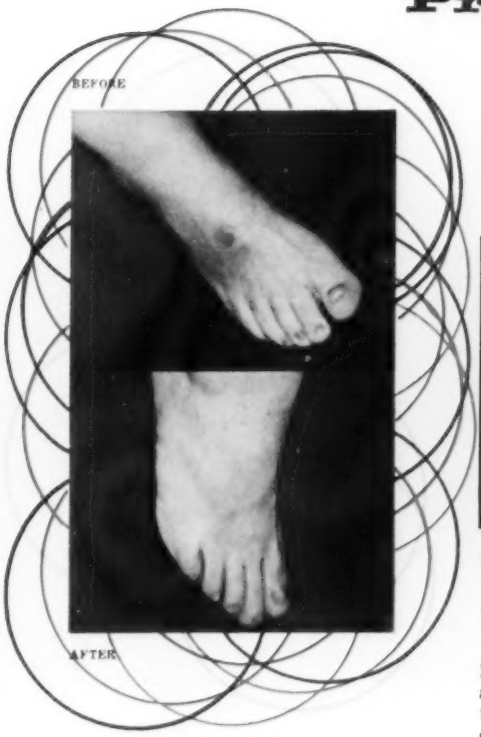

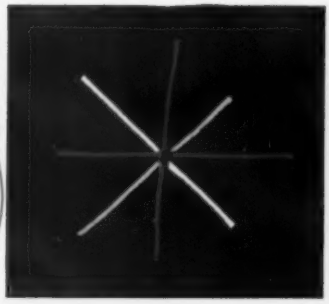

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1. Photographs and clinical data by courtesy of R. I. Lowenberg, M.D., Consultant in Vascular Surgery, Connecticut State Hospital, Middletown, Connecticut.

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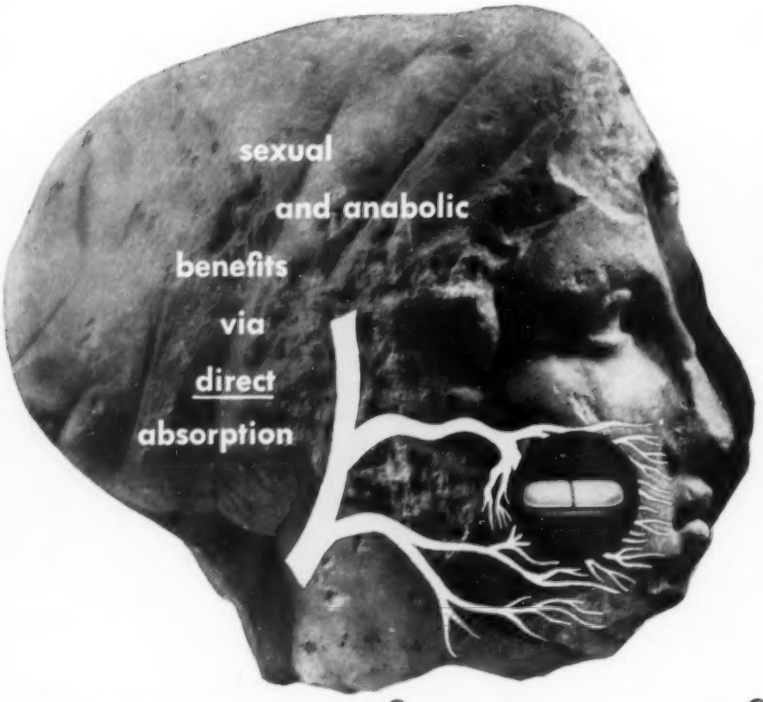

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prostate that is not fixed and with no demonstrable metastasis and, rarely, for extensive tuberculous prostatovesiculitis.

Suprapubic cystostomy—When the prostate is unusually large, primarily intracystic, or both; perineal access is difficult; instruments cannot be introduced through the urethra; a 2-stage procedure is to be made of transurethral resection, perineal prostatectomy, or suprapubic prostatectomy; or the condition of the patient does not justify definitive surgery, suprapubic cystostomy is performed.

Vas ligation reduces the incidence of epididymitis and should be done for all patients before prostatic surgery. Mortality after operation is ordinarily due to coronary insufficiency, embolism, cerebral hemorrhage, or thrombophlebitis.

Betatron Therapy of Brain Tumors

ARTHUR ARNOLD, M.D., PERCIVAL BAILEY, M.D., ROGER A. HARVEY, M.D., AND L. L. HAAS, M.D., UNIVERSITY OF ILLINOIS, CHICAGO, report that high-energy roentgen rays from the betatron are superior to conventional roentgen-ray sources for treatment of neoplasms of the central nervous system.

The betatron beam allows greater penetration, freedom from side-scatter, and decreased dose in the superficial 3-cm. layer of the irradiated body segment. Precise localization is possible with the well-defined homogeneous beam of high-energy roentgen rays, and a uniform dose can be delivered with only slight radiation to surrounding healthy tissue with the appropriate cross-firing technic. In histopathologic studies made at operation or postmortem examination, a much more intense cancerocidal effect is noted in tumors treated with high-energy roentgen rays than in comparable lesions given conventional x-rays.

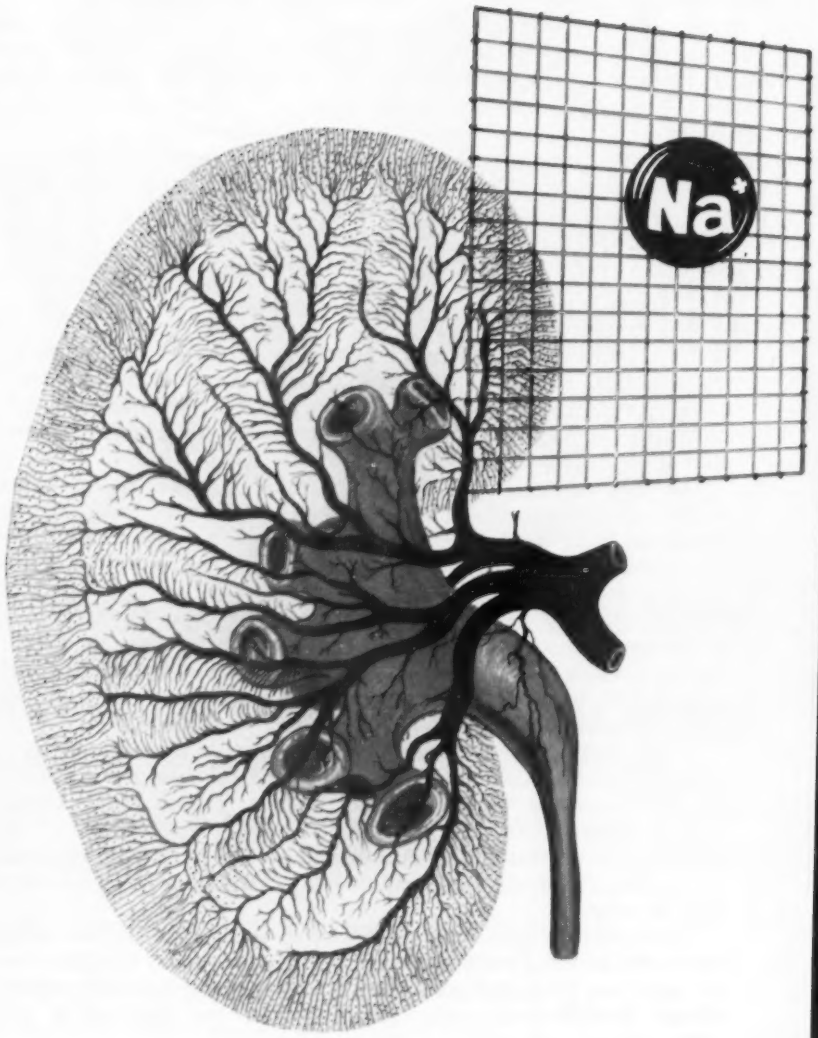
Of the first 25 patients treated by the betatron technic, only 3, 2 with glioblastomas and 1 with sarcoma of the posterior fossa, did not respond favorably. Of 16 malignant lesions, 9 were glioblastomas, and the other 7 patients had pituitary carcinoma, cancer of the choroid plexus, malignant ependymoma, chordoma, or sarcoma; 11 of the individuals, including 5 with glioblastomas, have lived a year or more.

The useful survival for 9 patients with benign disease was about thirty-one months; 4 subjects who have been observed for four years or more are alive and well. The benign tumors included astrocytomas, ependymomas, craniopharyngiomas, and eosinophilic and chromophobe adenomas.

The application of the betatron to treatment of brain tumors. South. M. J. 48:63-67, 1955.

MICTINE*—NON-MERCURIAL ORAL DIURETIC

Diuresis



Increased sodium ion excretion following administration of Mictine indicates the inhibition, or "screening," of reabsorption of this ion, as well as increased elimination of water and chloride.

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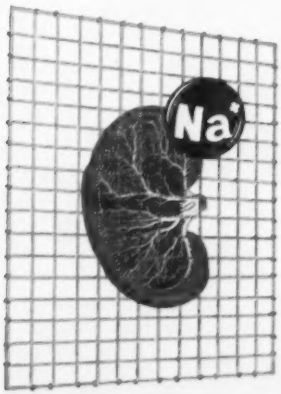
Mictine, neither mercurial, sulfonamide nor xanthine, is orally effective, well-tolerated and without known contraindications. Mictine causes excretion of water, sodium and chloride in amounts sufficient to reduce edema, yet does not upset the acid-base balance because only neutral salts are excreted. It is continuously effective with minimal side effects.

Effectiveness—Approximately 70 per cent of unselected edematous patients treated with Mictine have been found to respond with a satisfactory diuresis. This response is considerably greater when used in the control of the edema of congestive heart failure in patients with normal kidney function.



Clinical Field—Mictine is useful primarily in the maintenance of an edema-free state and in the initial and continuing control of patients with mild congestive failure. Mictine may be used also for initial and continuing diuresis in more severe congestive states, particularly when mercurial diuretics are contraindicated.

Administration—The usual dosage for the average patient is one to four tablets daily in divided doses with meals and on an interrupted schedule. The latter may be accomplished by giving the drug on alternate days or for three consecutive days and then omitting it for four days.

For severe congestive states the dosage is four to six tablets daily with meals, also in divided doses on interrupted schedules.

Supplied—Uncoated tablets of 200 mg.

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Early Management of Paraplegia

HOWARD A. RUSK, M.D.
New York University–Bellevue Medical Center, New York City

*Proper management of traumatic paraplegia from the time of injury can prevent or mitigate the effects of complications.**

MANY paraplegic patients can be retrained to live productive lives. Proper care during the first fourteen to eighteen days after injury, when the patient cannot be moved, will spare the patient considerable future discomfort and reduce the cost of extensive hospitalization.

Patients paralyzed from acute cord injury should be removed from the accident scene with great care. During transport, the head, neck, back, and legs must be held in a neutral anatomic position. Roentgenograms of the back are made while the patient is on the stretcher if further trauma is not a risk.

A flat, hard surface with a foam-rubber mattress is a satisfactory bed. A Stryker frame facilitates care. Trained nurses and attendants are essential.

Except with high cervical lesions, early laminectomy is desirable. An accurate diagnosis of cord transection can be made. An unequivocal diagnosis aids the patient's acceptance of his condition, thus facilitating an active training program.

Turning the patient every two hours and light massage over pressure areas will help prevent bedsores. If anhidrosis and febrile episodes occur during spinal shock, antipyretic measures such as aspirin, cold sponge baths, and ice-water enemas can be used. Aspirin and sedatives will control most pain. Opiates are seldom required.

Bowel distention is treated with neostigmine methylsulfate (Prostigmin) intramuscularly or by rectal tube, enema, and, if necessary, Wangensteen drainage. The rectum is emptied every other day by suppositories, enemas, or digital evacuation.

A Foley catheter is inserted early and the bladder irrigated three times daily with isotonic sodium chloride solution. A patent catheter, changed at least twice weekly, asepsis, and avoidance of bladder distention are important. Small repeated doses of methenamine or sulfonamides help prevent urinary infection.

A high-calorie, high-protein diet is essential, with protein hydrolysates added if tolerated. If oral intake is poor, whole blood, serum albumin, or plasma expanders are given intravenously in small, repeated doses. Normal nitrogen balance is restored in most patients by the tenth week after injury.

*Early management of the paraplegic patient. U. S. Armed Forces M. J. 6:157-161, 1955.

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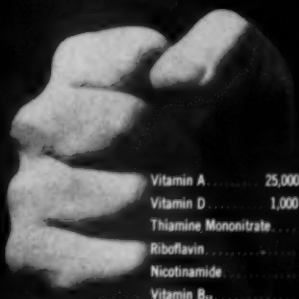

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Nicotinamide	150 mg.
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Other disorders include impaired liver function; decreased basal metabolism; mammary enlargement in males; testicular atrophy; and a temporary discontinuance of the menses.

Daily intramuscular injection of 50 mg. of testosterone propionate from the onset of injury decreases tissue breakdown, osteoporosis, weight loss, and decubitus ulcer formation.

To avoid atrophy, active exercises of unaffected body parts are started early with special precaution to prevent spinal motion. Strong triceps and finger flexors are needed for crutch walking.

Twice daily, all lower extremity joints are moved passively ten times through a complete range of motion. Foot drop is avoided by keeping the sheets loose and by maintaining the ankles at right angles with a footboard, posterior splint, or half-shell plaster cast. In order to properly fit braces and shoes, 90° dorsiflexion of the foot is required.

When orthopedically safe, use of the tilt board for early standing will decrease complications.

Cervical Arthritis of Neurocentral Joints

A. J. E. CAVE, M.D., J. D. GRIFFITHS, M.B., AND M. M. WHITELEY, M.B., OF ST. BARTHOLOMEW'S HOSPITAL MEDICAL COLLEGE, LONDON, find cervicobrachial neuritis due chiefly to neurocentral vertebral joint deformity, not to lateral protrusion of disks, as often assumed.

Lateral oblique films of the cervical spine usually show encroachment on several intervertebral foramina by osteophytes from the Luschka joints on both sides. Symptoms depend on degree of spinal nerve angulation by the outgrowths.

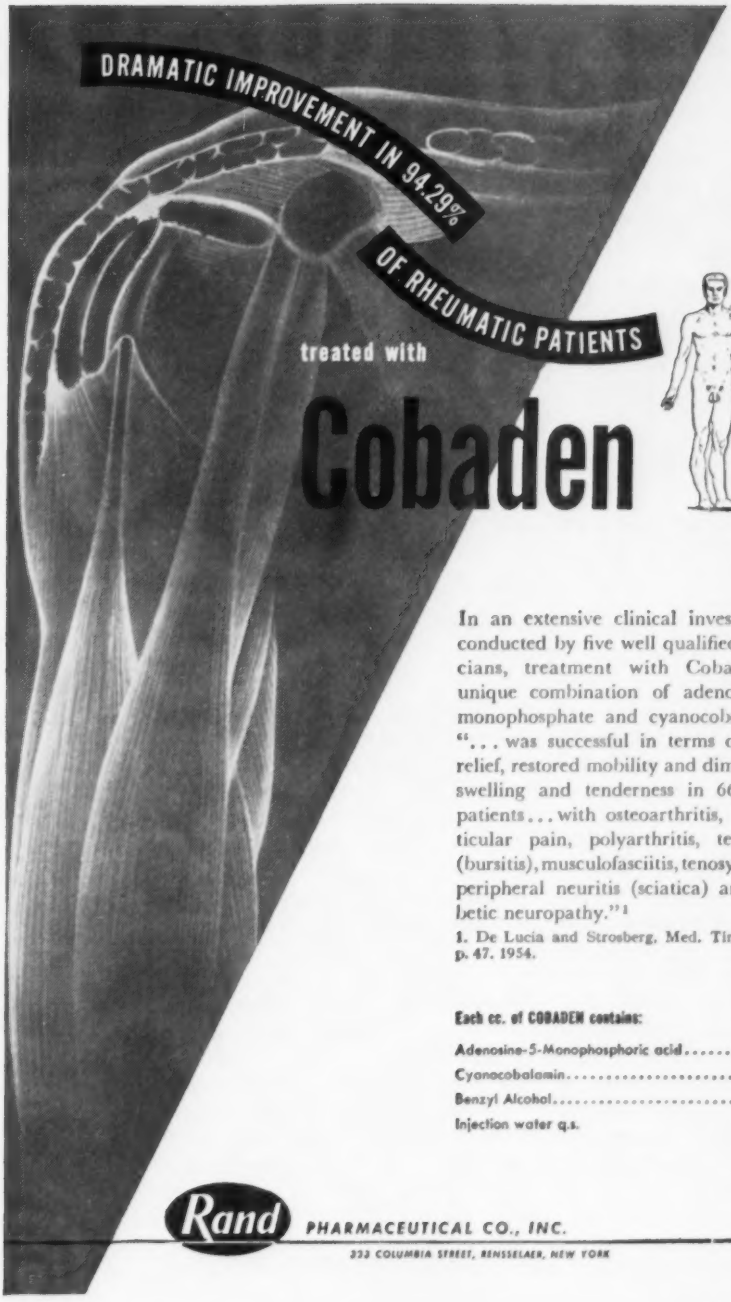
Lesions frequently begin in the fifth and six decades of life and become worse with age. Complaints start suddenly or gradually, and remissions up to six months or more may occur.

Pain is commonly felt in the neck and down the radial border of the arm, particularly on lateral flexion and rotation at the atlantoaxial joints.

Paresthesia of thumb, index, and middle finger occurs in about 75% of cases. Occasionally, pinprick sensitivity and triceps reflexes are diminished, or hand muscles are weak or shrunken. Scalenus and deep cervical muscles may be spastic.

Neurocentral apophysectomy, if practical, may be curative. Symptoms are relieved by analgesics, long courses of short-wave diathermy, and a plastic or plaster collar splint. Neck traction or manipulation should not be done because symptoms may be thus aggravated.

Osteo-arthritis deformans of the Luschka joints. Lancet 268:176-179, 1955.



In an extensive clinical investigation conducted by five well qualified physicians, treatment with Cobaden, a unique combination of adenosine-5-monophosphate and cyanocobalamin, "... was successful in terms of pain-relief, restored mobility and diminished swelling and tenderness in 66 of 70 patients... with osteoarthritis, polyarticular pain, polyarthritis, tendinitis (bursitis), musculofasciitis, tenosynovitis, peripheral neuritis (sciatica) and diabetic neuropathy."[1]

1. De Lucia and Strosberg. Med. Times 82:1, p. 47. 1954.

Each cc. of COBADEN contains:

Adenosine-5-Monophosphoric acid.....25 mg.
Cyanocobalamin.....60 mcg.
Benzyl Alcohol.....1.5%
Injection water q.s.

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Hormone Therapy in Ophthalmology

MICHAEL J. HOGAN, M.D., PHILLIPS THYGESON, M.D., AND SAMUEL KIMURA, M.D.
University of California, San Francisco

*Many eye diseases are cured by therapy with adrenal steroids or corticotropin, but other lesions are aggravated or not improved.**

CORTISONE, hydrocortisone, or corticotropin is administered systemically for acute inflammations of the posterior segment and for chronic anterior ocular inflammations that are not eradicated by topical therapy.

Systemic steroid treatment is valuable for patients with chorioretinitis, sympathetic ophthalmia, or the Vogt-Koyanagi syndrome. The drugs are not effective against retrobulbar neuritis, chronic iridocyclitis and chorioretinitis, orbital pseudotumor, or progressive exophthalmos.

The usual dosage of cortisone is 300 mg. the first day, 200 mg. the second day, and 100 mg. each day thereafter. Medication is continued as long as vision seems to be endangered.

When intramuscular cortisone is used, effects are delayed for three to four hours but a single daily injection suffices. Orally, 25-mg. tablets are used. Emergency treatment by the intravenous route may be necessary for juxtapapillary or macular lesions.

Oral dose of hydrocortisone is 80 mg. the first day; the amount is reduced on the second and third days according to the response. If a rapid, intense hormonal effect is desired, a hydrocortisone acetate suspension containing 25 mg. per 1 cc. and dissolved in isotonic saline or a dextrose solution may be administered intravenously. Intramuscular hydrocortisone is ineffective.

Corticotropin may be used when the adrenal steroids are not effective. Use of the hormone is limited to therapy of chronic anterior ocular disease and acute inflammations in the region of the disk, papillomacular bundle, or the macular or paramacular area.

Corticotropin is ineffective orally since the hormone is destroyed in the gastrointestinal tract. The usual intravenous dose of 25 mg. dissolved in a liter of 5% glucose and saline solution is administered over an eight-hour period.

The initial intramuscular amount of 80 to 120 mg. is divided into 4 doses; 1 is given every six hours. Dosage is reduced to 50 to 80 mg. or increased to 100 to 150 mg. a day according to response. The long-acting intramuscular preparations of corticotropin can be given at twelve-hour intervals.

Topical treatment is reserved for

*Uses and abuses of adrenal steroids and corticotropin. Arch. Ophth. 53:165-176, 1955.

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diseases of the anterior ocular segment, conjunctiva, and eyelids. Corticotropin is not used locally, but cortisone and hydrocortisone are equally effective for acute iridocyclitis of all types, acute keratitis of nonviral etiology, acute conjunctivitis caused by allergy, phlyctenulosis, rosacea, and diffuse episcleritis.

A cortisone acetate suspension in 0.5% solution may be given as drops every hour, and a 1.5% ointment of the steroid is applied at night. If treatment is unsuccessful, 0.5 cc. of a 2.5% suspension of cortisone is injected subconjunctivally beneath the upper lid every three to five days.

Hydrocortisone therapy is instituted if cortisone is ineffective and for contact dermatitis of the lids, sclerosing keratitis, superficial punctate keratitis, and recurrent corneal erosions. Dosage and method of application are the same as for cortisone, except 0.3 cc. may be adequate for subconjunctival injection. For vernal conjunctivitis, therapy is begun with the 2.5% solution of hydrocortisone.

Dendritic ulcers of the cornea or acute disciform keratitis may occur among some patients receiving topical medication for lid or conjunctival lesions. Herpetic lesions may be aggravated by topical steroids.

Adrenocortical steroids and corticotropin should not be used for persons with [1] peptic ulcer; [2] diabetes; [3] tuberculosis; [4] hypertension, unless mild and the patient is observed constantly; [5] heart disease; or [6] infectious diseases, unless antibiotics are also given.

If therapy is prolonged, [1] urinalyses are made at least twice weekly at the onset; [2] blood pressure is recorded frequently; [3] weight is measured each week to detect water retention; [4] potassium is administered to replace urinary loss and to prevent sodium retention; and [5] a close watch is kept for sepsis or perforation of peptic ulcer, Cushing's syndrome, and exacerbation of the ocular inflammation.

During withdrawal, the dose should be reduced every one or two days by 10 to 12.5 mg. The patient must be observed for infection or evidence of stress. Corticotropin should be administered for a week or until normal levels of cortisone secretion are restored.

¶ CYCLOPLEGIA AND MYDRIASIS induced by a drop of 5% buffered solution of oxyphenonium bromide (Antrenyl) are more prolonged than similar effects produced by atropine. Because of the intensity of action, Ira A. Abrahamson, Jr., M.D., and Paul Hurwitz, M.D., of Chicago Medical School and Cook County Hospital, Chicago, find that the substance may be effective in single daily instillations in some ophthalmic diseases. The medicament is not counteracted by miotics singly or in combination. Antrenyl should not be used if the danger of precipitating glaucoma exists.

Arch. Ophth. 52:519-523, 1954.

DIAL SOAP with Hexachlorophene
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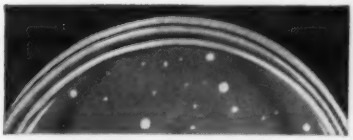

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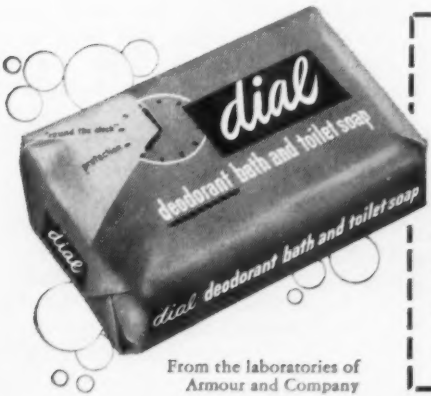

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Upper Respiratory Obstruction

DONALD E. MC DOWELL, M.D., AND WALTER H. MALONEY, M.D.
Episcopal Hospital, Philadelphia

*Prompt recognition and proper use of tracheotomy are essential to prevent death from acute respiratory obstruction.**

ACUTE obstruction of the upper respiratory tract is not a common condition, but proper management during the first few hours is frequently lifesaving. Physicians in emergency wards should be able to recognize obstruction and to perform emergency tracheotomy if necessary.

Signs of respiratory obstruction include labored inspiration, stridor, and supraclavicular retraction upon inspiration. The pulse is rapid and weak, and fatigue and cyanosis are commonly noted. The expression on the patient's face is usually one of anxiety.

The commonest cause of obstruction is acute laryngotracheobronchitis, which is most frequently seen in children between the ages of 18 months and 7 years. Hemolytic streptococci of the beta group cause rapid laryngeal edema resulting in sudden severe asphyxia. In some cases, direct laryngoscopic examination with aspiration of thick secretions at the subglottic level will relieve the obstruction. In most instances, however, tracheotomy will be required, after which the child is placed in a humidified tent to thin the secretions and to prevent crusting in the tracheotomy tube and drying of the shortened airway.

Carcinoma of the larynx should be suspected in elderly patients with acute respiratory obstruction unrelated to trauma. Usually the patient has noted hoarseness, pain with swallowing, tonsillar or ear pain, or neck nodes for several months. The tracheotomy in these cases is placed as low as possible in order not to interfere with later surgery or x-ray therapy. After tracheotomy, both mirror and direct laryngoscopic examinations are advisable to make an accurate diagnosis.

Compression or invasion of the trachea by carcinoma of the thyroid may be responsible for respiratory distress. When the recurrent laryngeal nerves are involved, bilateral cord paralysis will lead to obstruction. Asphyxial signs may occur during x-ray therapy because of irradiation edema.

During coma, the tongue may drop back and cause obstruction. When the coma is of short duration, an oropharyngeal airway suffices. When secretions are retained, however, an airway is needed which can be entered by a soft rubber catheter for tracheal aspirations.

*Acute obstruction of the upper respiratory tract. Arch. Otolaryng. 61:29-37, 1955.

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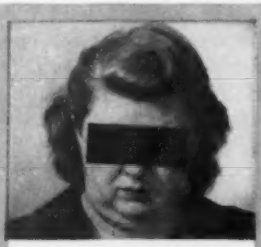
R.W., 29 year old male. Pretreatment blood pressure averaged 220/130. He was treated with Unitensen, 12 mg. daily. Blood pressure fell to an average of 165/100. There was also marked improvement of severe, grade II retinitis.



R.A., 49 year old obese white female. Pretreatment blood pressure averaged 220/125. She was given 6 mg. of Unitensen daily. Blood pressure after treatment averaged 165/100. There was a further drop to 150/95 with weight reduction.

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In these patients an endotracheal tube or tracheotomy must be utilized. The endotracheal tube must be removed after twenty-four to thirty-six hours to avoid mucosal irritation; therefore, when a prompt response to therapy is not anticipated, tracheotomy is the preferred therapy.

Mediastinal emphysema may expand upward and gradually obstruct the upper respiratory tract. This occurrence may be noted after chest trauma, tension pneumothorax, chest surgery, or fracture of the trachea and bronchi. Tracheotomy should be performed early to provide an airway; mediastinotomy is also advisable to relieve the air that is accumulating in the mediastinal space.

Prophylactic tracheotomy is done whenever obstruction seems a possibility after surgery on the tongue, floor of the mouth, mandible, or hypopharynx.

¶ ENDOMETRIAL CARCINOMA may occur after bilateral oophorectomy. Development of the tumor in 8 patients convinces Theodore Cianfrani, M.D., of the University of Pennsylvania, Philadelphia, that total hysterectomy should be done when both ovaries must be removed. Carcinogenesis cannot be ascribed to aberrant ovarian activity.

Am. J. Obst. & Gynec. 69:64-72, 1955.

¶ TRICHOMONAL VAGINITIS may be rapidly eradicated by treatment with carlendacide, a balanced blend of polyoxyethylene nonyl phenol, sodium ethylenediaminetetraacetate, and sodium dioctyl sulfosuccinate, reports Carl Henry Davis, M.D., of Miami. The vagina is thoroughly washed with a 1:250 solution of the preparation during 6 office visits within two or three weeks, and the patient is instructed to douche with the substance morning and night on nontreatment days.

West. J. Surg. 63:53-55, 1955.

¶ PELVIC ENDOMETRIOSIS may be successfully treated with massive doses of stilbestrol. Although the induced hyperhormonal amenorrhea has no effect on the mass of aberrant tissue, Arthur L. Haskins, M.D., and Ralph B. Woolf, M.D., of Washington University, St. Louis, find that the drug causes prompt remission of pain and tenderness. The daily dose of the medicament is increased gradually from 1 mg. to 100 mg. for a period of about three months. Of 15 patients, 11 have remained asymptomatic for an average of twenty-one months.

Obst. & Gynec. 5:113-122, 1955.

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1. Rukes, J. M., et al.: Metabolism 3:481, 1954.
2. Peterkin, G. A. G.: Brit. M. J. 1:522, 1954.

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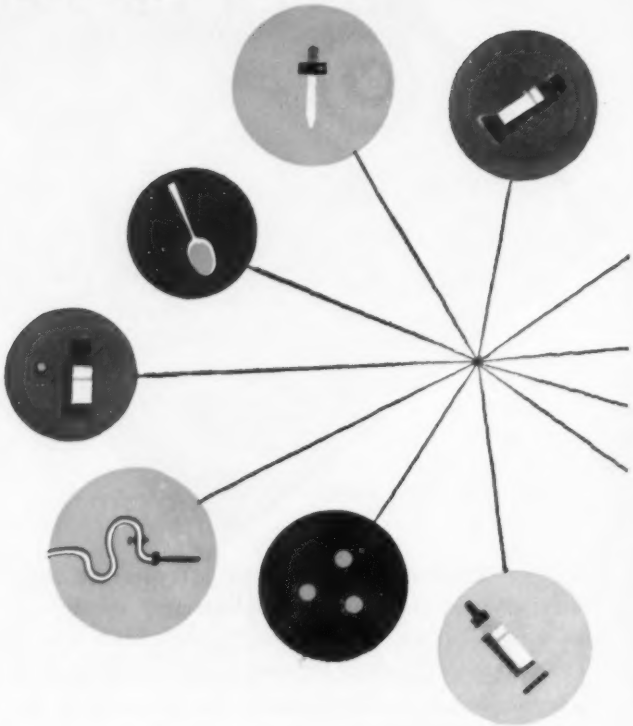

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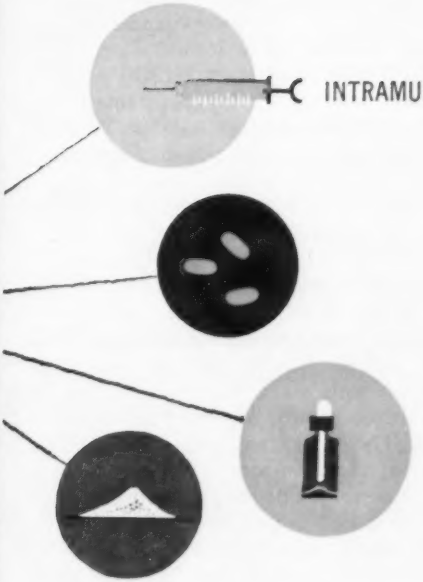

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PEDIATRIC DROPS (Cherry Flavor): 100 mg. per cc. (approx. 5 mg. per drop), 10 cc. bottle

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SYRUP (Cherry Flavor): 125 mg. per teaspoonful (5 cc.), 2 oz. bottle

TROCHES 15 mg. (Peppermint Flavor): bottle of 25 and 250

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Management of Hodgkin's Disease

COL. ROMEYN J. HEALY, M.C., COL. HAROLD I. AMORY, M.C., AND MILTON FRIEDMAN, M.D.
Walter Reed Army Hospital, Washington, D. C.

*Treatment for Hodgkin's disease is based on the concept that the condition is a malignant neoplasm.**

THE etiology of Hodgkin's disease is unknown. The disease is apparently unicentric in origin, beginning in a single lymph node or a small group of lymph nodes and spreading in the manner of a neoplasm.

The first sign of the disease is frequently enlargement of a cervical lymph node which persists for three weeks or more. When a regional inflammatory lesion cannot be found to account for the enlargement, a biopsy should be made. Establishment of the diagnosis may be difficult at times since the adenopathy may regress temporarily with antibiotic therapy or the biopsy may be misinterpreted. Reexamination at least every three months will eliminate overlooking early stages of the disease.

The stage of the disease should be noted at the initial examination. The following classification may be employed:

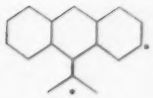
- Stage I. Involvement of a single lymph node group or organ without constitutional symptoms
- Stage II. Involvement of two adjacent lymph node groups or of a single organ and regional lymph nodes, with or without constitutional symptoms
- Stage III. Involvement of two separated lymph node groups or more than one organ, with constitutional symptoms

The primary treatment of Hodgkin's disease is x-ray irradiation. This consists of a tumor dose of 1,500 r in one week; 2,500 r in three weeks; or, for resistant lesions, a total dose of 4,000 r. With stage I lesions, the entire group of involved nodes is irradiated through a large field. If the bowel or stomach is involved, the organ and adjacent nodes may be irradiated or the organ may be excised.

With stage II lesions, the involved areas and the adjacent group of lymph nodes are irradiated, while with stage III cases all the involved groups of nodes are treated. The latter may require several series of treatments with interposed rest periods. For patients with large, deep-seated lesions in the thorax or abdomen, supervoltage x-ray is employed to reduce the number of treatments.

The over-all five-year survival rate in a series of 216 patients was 37%; the ten-year rate was 6%. With stage I lesions, the five- and ten-year survival rates were 50 and 12% respectively.

*Hodgkin's disease. Radiology 64:51-55, 1955.



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It is indeed remarkable that so many of the early pharmacologic conjectures as to 'Thorazine' have so soon become established clinical realities. This is, of course, due to the widespread and intense medical interest in the drug, on which new articles are constantly appearing.

'Thorazine' Hydrochloride is available in 10 mg., 25 mg., 50 mg. and 100 mg. tablets; 25 mg. (1 cc.) and 50 mg. (2 cc.) ampuls; and syrup (10 mg./5 cc.).

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Phlebography of the Lower Extremities

D. A. FELDER, M.D., AND T. O. MURPHY, M.D.
University of Minnesota, Minneapolis

*A technic of isoflow phlebography permits good visualization of the postphlebitic limb and provides an accurate guide for subsequent flap operations.**

KNOWLEDGE of the anatomy of the postphlebitic limb is essential to improved understanding and therapy. A technic of isoflow phlebography has distinct improvements over previous methods, both in visualization and in evaluation of patients for flap operations. The method allows location of incompetent communicating vessels of the lower leg which may normally be missed.

The patient lies on an x-ray table at 65° from the horizontal, with the legs internally rotated to separate the tibia and fibula and the heels resting on a sandbag 2 in. in diameter. For the initial film, the x-ray tube and film cassette are placed to include the leg from the heel to the knee, with the tube in the first stereographic position, 1½ in. from the center.

Tourniquets are placed tightly around the ankles to prevent the dye from entering the superficial venous circulation. An infusion of 200 cc. of 5% dextrose or saline solution, with the bottle above heart level, is started into a superficial vein on the dorsum of each foot by means of a glass Y adapter with a tube leading to each foot.

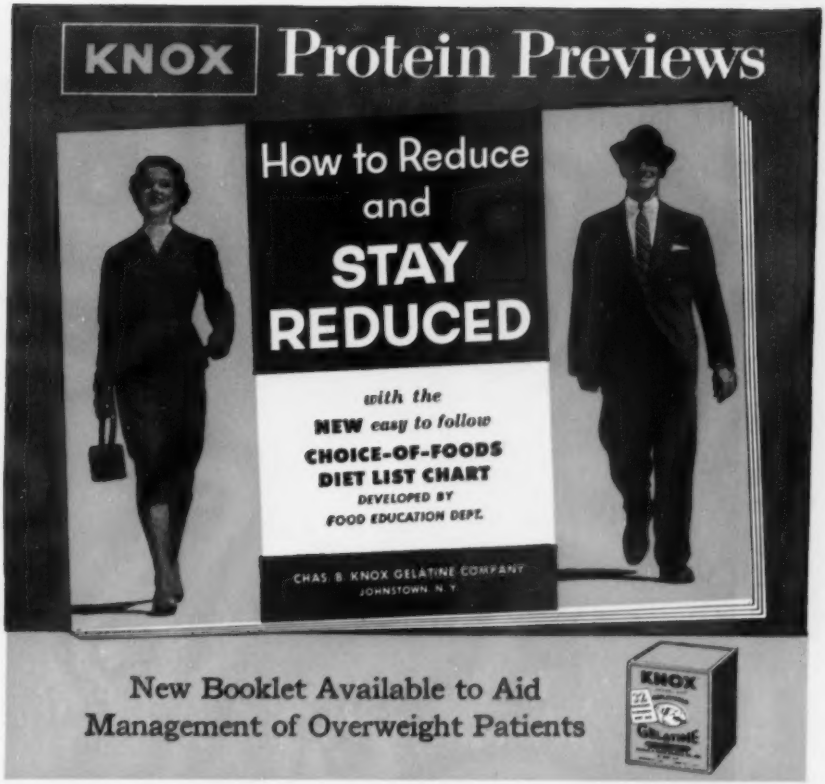
A syringe containing 20 cc. of 35% Diodrast is then attached to rubber tubing above the Y adapter. A hemostat is clamped on one of the tubes leading to a foot and the dye is injected as rapidly as possible without forcing. The hemostat is released and clamped on the tube of the other foot, and the procedure is repeated. Each foot is injected twice in this manner, receiving a total of 40 cc. of Diodrast.

After the total amount of dye is injected, the intravenous fluid is allowed to flow rapidly. Films are exposed ninety seconds after completion of the injection; 2 stereographic exposures of the legs are made, and the tube and cassette are then moved and 1 exposure of the thighs is made. Exposures are made rapidly, within thirty to forty-five seconds of each other.

The exposures should be of such intensity that the bony trabeculations of the proximal head of the tibia are shown well. Edema or variations in thigh size must be allowed for when making the exposures. Occasionally, the patient should be hospitalized with eleva-

(Continued on page 152)

*The evaluation of a method of phlebography of the lower extremities. Surgery 37:198-205, 1955.



The 1955 edition of the well-known Knox "Eat-and-Reduce" booklet eliminates calorie counting for your obese patients. This year's edition is based on the use of Food Exchange Lists[1] which have proved so accurate in the dietary management of diabetics. These lists have been adapted to the dietary needs of patients who must lose weight.

The first 18 pages of the new booklet present in simple terms key information on the use of Food Exchanges (referred to in the book as Choices). In the center, double gatefold pages outline color-coded diets of 1200, 1600, and 1800 calories based on the Food Exchanges. Physicians will find these diets easy to revise to meet the special needs of individual patients.

To help patients persevere in their reducing plans, the last 14 pages of the new Knox booklet are devoted to more than six dozen, *tested,* low-calorie recipes. Please use the coupon below to obtain copies of the new "Eat-and-Reduce" booklet for your practice.

---

1. Prepared by the American Dietetic Association in cooperation with the Public Health Service, Federal Security Agency, and The American Diabetes Association.

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tion of the feet for twenty-four hours beforehand to reduce swelling.

After the films are made, the patient is returned to a horizontal position but the needles are left in place until the films are developed and proved to be satisfactory.

The following signs are important considerations in determining venous incompetency: [1] exceptional dilatation of the vein, [2] one or more incompetent valves in the same area with dilatation of the vein below the valve, [3] tortuosity of the vein, [4] pooling of the contrast medium in deep vein varices, and [5] an extensive irregular lumen without visible valve structure. The entire phlebographic picture of the extremity must be considered in the final interpretation.

¶ PLANTAR WARTS may be readily eradicated by freezing with liquid nitrogen. Joseph B. Mathewson, M.D., Ithaca, N.Y., applies the substance with a cotton applicator for fifteen minutes, which causes formation of a blister beneath the growth. Usually after one week, the bulla is incised and drained, and the involved epidermis is excised. The office procedure was used for 63 subjects. Patients remained ambulatory, healing was rapid, and no postoperative infections occurred.

New York J. Med. 55:374-375, 1955.

¶ POISON IVY DERMATITIS will not develop if a lotion containing 4% hydrous zirconium oxide is rubbed into the skin within eight hours of contact with *Rhus toxicodendron*. G. A. Cronk, M.D., and D. E. Naumann, M.D., of Syracuse University, N.Y., find that the medicament alone or in combination with 1% phenyltoloxamine dihydrogen citrate will not modify the course of established lesions, but both drugs singly or together are antipruritic.

Antibiotics & Chemother. 5:64-66, 1955.

¶ DERMATOSES WITH PSYCHOGENIC COMPONENTS are ameliorated by the administration of 0.25 mg. of reserpine (Serpasil) four times a day. Among 60 patients with atopic dermatitis, neurodermatitis, and other pruritic afflictions, Charles R. Rein, M.D., and J. John Goodman, M.D., of New York City, noted that 40 subjects became calm and relaxed. The drug benefited 5 persons with palmar hyperhidrosis. Moderate drowsiness affected most individuals initially but subsided during the second week. Therapy was discontinued in 10 instances because of development of unpleasant effects.

Arch. Dermat. & Syph. 70:713-717, 1954.

Use of Electricity for Facial Paralysis

ARTHUR A. RODRIQUEZ, M.D., AND EMANUEL M. SKOLNIK, M.D.
Loyola University, Chicago

*Prognosis of facial nerve paralysis can be determined by electrodiagnostic technics, and electric stimulation is the most important therapeutic modality.**

STATUS of the facial nerve can be assessed by the faradic-galvanic test and electromyographic examination. The procedures are especially reliable for patients with Bell's palsy. Since the end results of seventh cranial nerve paralysis vary greatly, therapy cannot be evaluated unless the diagnostic tests are performed before treatment is instituted.

The faradic-galvanic test measures the response of the nerve and the corresponding muscles to 2 types of current. A dispersive electrode is placed on the back, upper arm, or hand, and the testing electrode is first positioned over the nerve point of the facial trunk just anterior to the tragus. The upper, middle, and lower branches and the muscles in each area are also tested.

The minimal intensities of faradic (induced) and of galvanic (constant, voltaic) currents required to obtain a liminal response are determined first for the unaffected and then the involved side. Tests are performed serially during the first three weeks after onset of paralysis but are not reliable after the first month.

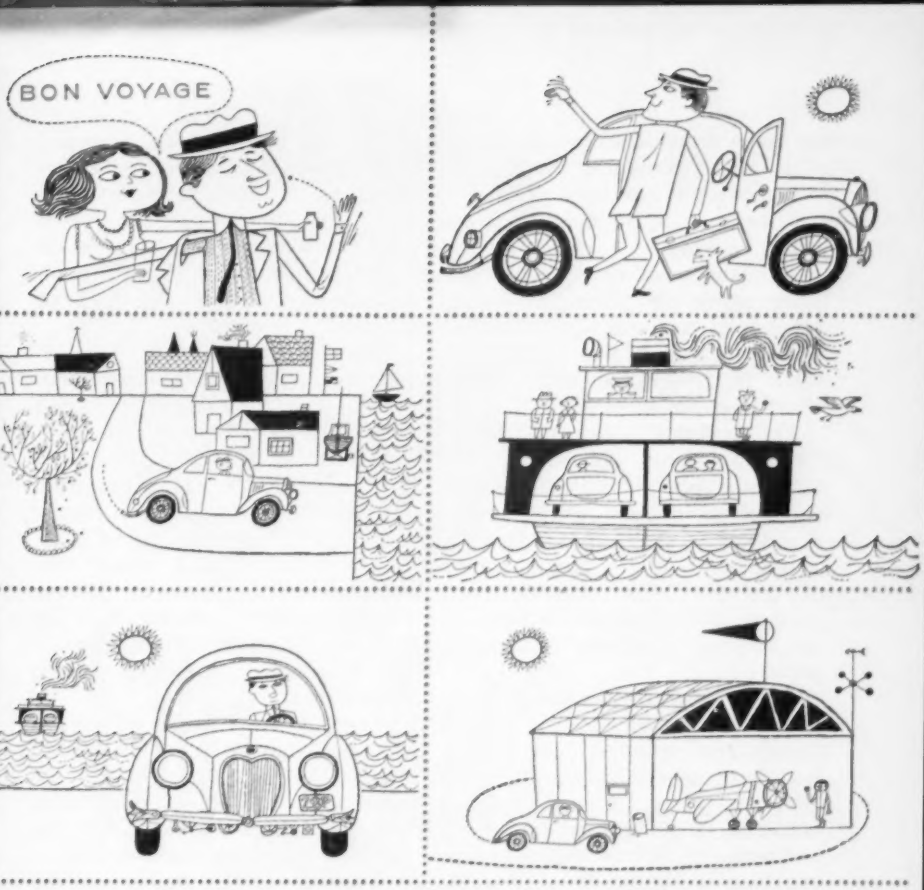
Prognosis is based on the reaction of degeneration (R.D.). The patient has no R.D. when the nerve and muscles respond to faradic and galvanic stimulation. Recovery begins two weeks after onset of paralysis and is sometimes complete within five weeks.

Slight partial R.D. implies diminished nerve reactions to faradic and galvanic currents; muscle response is reduced when faradic energy is employed and increased with galvanic current. Function begins to return in five weeks. Changes are more pronounced with severe partial R.D.; 90% recovery may occur in five months.

With full R.D., neither current produces nerve reaction and the muscles do not respond to faradic stimulation and react in an altered manner to galvanic power. Recovery does not occur for six to twelve months and is usually incomplete. No nerve or muscle response is produced by either current when a patient has absolute R.D. Function may never be regained.

Facial electromyographic examination provides more precise information. The procedure is more difficult than study of the limbs or trunk because action potentials in

*Electrodiagnostic-therapeutic modalities in facial nerve paralysis. Ann. Otol., Rhin. & Laryng. 63:1015-1023, 1954.



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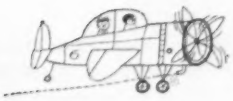

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the facial musculature are of shorter duration, periods of electric silence are sometimes hard to obtain, and the face is often affected by distant activity.

Spontaneous occurrence of fibrillation potentials when the facial nerve is at rest is a sign of wallerian degeneration and poor prognosis. If denervation is complete, effort does not change the pattern.

The polyphasic nascent unit is the earliest sign of regeneration and signifies a good prognosis. This unit appears about eight weeks before symptoms of recovery. Other signs of regeneration are disappearance of the fibrillation potential and gradual appearance and increase in the number of normal motor unit potentials.

Physiologic block without nerve degeneration causes electric silence during rest or effort and implies good prognosis unless the block becomes more severe and produces wallerian degeneration.

Though treatment of facial nerve paralysis should be designed to relieve edema, electric stimulation and other physical measures are employed to retard or prevent muscle fiber degeneration and electrophysiologic and chemical changes. Effective electric stimulation rapidly restores kinesthesia; retards the loss of actomyosin, the contractile substrate of muscle tissue; and reverses the denervation decrease in the nonexchangeable potassium of muscle.

Electric stimulation with the current that produces the most effective muscle contraction is started soon after onset of paralysis. Sinusoidal current of low frequency, 0.5 to 5 cycles per second, is preferred for patients with reaction of degeneration. A tetanizing current is selected if nerve and muscle responses are not impaired. During stimulation, the muscles must be held by the therapist so mechanical tension is developed during contraction.

Therapy is generally continued for about ten minutes. No further benefit can be obtained after the contraction response diminishes, but stimulation of the muscle to the point of fatigue is not harmful.

Treatments are administered until voluntary contraction reaches 50% of normal, the face is nearly symmetrical when at rest, or stimulation does not produce benefit.

¶ INFECTIONS OF THE EXTERNAL EAR and mastoid cavities caused by *Pseudomonas pyocyanea* may be effectually controlled by local application of polymyxin B sulfate. A 10% solution of the antibiotic in propylene glycol acidified with acetic acid is of some value in eradicating *Escherichia coli*, but D. A. T. Farrar, F.R.C.S., of St. Bartholomew's Hospital, London, finds that the medicament is ineffective when *Proteus vulgaris* is the infecting agent. The preparation is instilled by the patient morning and night, and a plug of cotton wool is inserted in the meatus.

Brit. M. J. 4888:629, 1954.

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Symposium on Antibiotics

Use in Ophthalmology

IRVING H. LEOPOLD, M.D.
Wills Eye Hospital, Philadelphia

TREATMENT of eye infections must be instituted before tissue destruction produces irreversible visual loss. Selection of an antibiotic should be based on bacteriologic studies when possible. Effectiveness of therapy depends not only on dosage and route of administration but also on penetration of the agent into the infected ocular structures.

Most antibiotics penetrate poorly from the blood stream into the aqueous humor, cornea, and vitreous. Only chloramphenicol, sulfa compounds, and isoniazid can be given orally in tolerated dosages. Massive intramuscular doses of penicillin and streptomycin and large intravenous injections of almost any antibiotic produce adequate intraocular concentrations.

From 2 to 4 times the bactericidal or inhibitory concentration in test tubes is generally adequate at the site of infection. However, bacteria multiply at different rates. Staphylococci and streptococci increase rapidly and often require large, frequent doses of penicillin. For slow-growing tubercle bacilli, 2 doses of streptomycin weekly may be enough.

Most conjunctival and many corneal infections respond to local therapy. Topical agents do not diffuse into the intact cornea readily. If cautiously used, detergent, iontophoresis, cotton packs, or subconjunctival injection may increase penetration.

Since treatment may sensitize the patient, a drug is selected that probably will not be chosen in the future for a more severe systemic disease. Neomycin, polymyxin, or bacitracin may be satisfactory.

Chloramphenicol and neomycin are convenient because of stability in solution. Prescriptions seldom have to be refilled before external infections subside. Penicillin, streptomycin, and chloramphenicol injected subconjunctivally are less irritating than Aureomycin and Terramycin.

Prophylactically, antibiotics are given for potentially infected wounds, such as penetrating injury by a foreign body. Drugs cannot take the place of aseptic technic and are not used by many surgeons when contamination is unlikely.

Adrenal hormones are often combined with antibiotics for inflammatory conditions such as conjunctivitis, episcleritis, keratitis, and blepharitis, in hope of hastening recovery and reducing tissue damage. The combination is dangerous in some instances. External lesions can be watched closely and therapeutic methods changed when necessary.

Whether to use steroids for intraocular inflammation may be difficult to decide. Inflammation may

Symposium: Antibiotics up to date. Tr. Am. Acad. Ophth. 58:809-840, 1954.

BOTTLED CARBONATED BEVERAGES

can stimulate impaired appetite!

In states of illness and convalescence, the human appetite may call for less food than the body hungers for. Appetite for essential food also may be lessened during mild sluggishness of the digestive tract.

The practice of feeding convalescent patients bottled carbonated beverages to stimulate appetite is important in hospitals, and at home. The beneficent results observed and obtained by physicians as a result of this practice are unquestionable evidence that carbonated beverages stimulate impaired appetite by virtue of the action of CO_2 in exciting increased blood supply and spontaneous movement of the digestive tract. While carbonated beverages will not make an excessive eater out of a normal human whose hunger and appetite are balanced, they will often stimulate impaired appetite to more fully meet the body's food requirements.

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produce severe visual loss if infection persists more than two days.

Antibiotic medication should probably be started alone. If no improvement occurs in twenty-four hours, a different agent may be substituted and a hormone added. ACTH apparently mobilizes other adrenal steroids as well as cortisone or hydrocortisone and, therefore, may be superior to either.

Otolaryngologic Applications

JAMES H. MAXWELL, M.D.
University of Michigan, Ann Arbor

INDISCRIMINATE antibiotic therapy for ear and throat diseases may conceal the diagnosis, sensitize the subject, render bacteria immune, or produce chronic infection.

Antibiotics should be prescribed only when infection warrants off-the-job disability. When drugs are given hastily for every slight infection, antigen is reduced and production of immune bodies suppressed. Antibodies are needed for complete elimination of the parasite.

Patients should be carefully selected. Many individuals receive antibiotics for headache, chronic hoarseness, sore throat, and other complaints that are actually caused by a tumor, foreign body, or allergy. Any antibiotic can mask symptoms of mastoiditis, sinus thrombosis, and epidural abscess.

Poor choice of compounds, inadequate dosage, or premature withdrawal may favor bacterial resistance and chronic involvement. Subsidence of fever and pain is not a sign of complete recovery. Much deafness in children results from low-grade inflammation and scarring of the middle ear after acute attacks.

Reactions to penicillin were responsible for 15 anaphylactic deaths reported in eighteen months, and the broad-spectrum compounds are far more toxic. Penicillin is most dangerous in the form of dust or lozenges, and parenteral administration is more sensitizing than oral therapy.

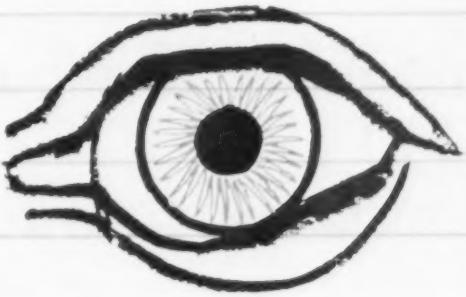
Reactions to penicillin generally occur only after repeated medication. If a previous course has been given, a scratch test should be done before further therapy. If results are negative, an intracutaneous test is performed.

If acute otitis media develops without severe upper respiratory infection and pronounced systemic symptoms, medication may be delayed for two or three days. Fever, leukocytosis, pain, and profuse seropurulent discharge at onset necessitate immediate drug therapy.

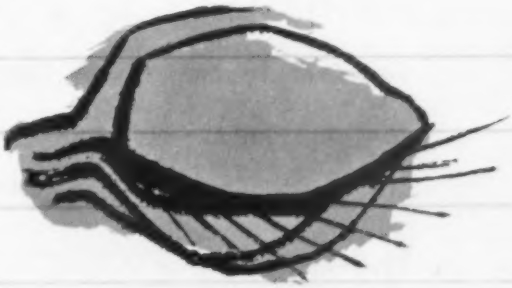
Prolonged or repeated use of antibiotics should not be substituted for surgery in treatment of otitis media of infants and small children. Pus in the middle ear should be drained by myringotomy. If a child can be kept comfortable and afebrile only with antibiotics and biweekly myringotomy, adenoidectomy and, sometimes, simple mastoidectomy are advisable.

Acute bacterial infections of the pharynx, larynx, nose, and sinuses with fever, pain, high white cell count, and general malaise also demand specific therapy.

Noludar 'Roche'



for daytime tension



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NOT A BARBITURATE

When antibiotic treatment seems advisable, sensitivity of organisms should be determined to penicillin and a few broad-spectrum antibiotics particularly neomycin and bacitracin.

When tests are not feasible, penicillin may be prescribed for acute follicular tonsillitis, suppurative sinusitis, or suppurative otitis media with fever and leukocytosis. If the condition is not better in forty-eight to seventy-two hours, Aureomycin or Terramycin is substituted, and sensitivity of organisms is tested at once.

For treatment of acute pyogenic infections, full dosage should be continued for at least five days and for at least two days after acute symptoms disappear. For a specific granulomatous condition, months of therapy may be necessary.

Prophylactic medication is advisable before and after surgery when contamination of the operative field is almost certain. The drugs should not always be used for tonsillectomy, submucous resection of the septum, and short procedures in clean tissues about the face and neck.

Use in General Medicine

WESLEY W. SPINK, M.D.
University of Minnesota, Minneapolis

EVEN slight infections should be treated with antibiotics if the etiologic agent is identified since cost of the drugs is low and the proportion of severe reactions is small. Prompt therapy may prevent complications. Benefit of antibiotics for some viral diseases, such as the common cold, is doubtful.

Tyrothricin, a crude preparation containing gramicidin, is applied topically against gram-positive cocci, especially for lesions of the skin or infected mucous membranes of the eye and nasopharynx.

Penicillin is employed for [1] invasion by group A hemolytic streptococci, [2] most infections caused by alpha and gamma streptococci, including subacute bacterial endocarditis and urinary disease, [3] pneumococci, as in lobar pneumonia and meningitis, [4] gonorrhea, [5] syphilis, [6] sensitive staphylococcal infection, [7] actinomycosis, and [8] anthrax.

With severe systemic involvement, aqueous solutions of crystalline penicillin G are injected intramuscularly in divided doses. For prophylaxis, slight infection, and some streptococcal and gonococcal conditions, slowly absorbed preparations such as procaine penicillin and Bicillin may be preferred. Oral therapy is especially effective for children.

Streptomycin is extremely effective for tuberculosis. The agent is the first choice for tularemia and some urinary infections produced by gram-negative bacilli and may be used with various drugs for meningitis from *Hemophilus influenzae*, brucellosis, and *Klebsiella pneumoniae* disease.

Vestibular dysfunction is the toxic effect of streptomycin, and dihydrostreptomycin may cause deafness. Toxicity may be reduced by using both drugs in equal parts. Streptomycin is preferred for long-

term therapy. Either agent is injected intramuscularly.

The broad-spectrum compounds are *chlortetracycline* (Aureomycin), *oxytetracycline* (Terramycin), and *tetracycline* (Achromycin, Tetracyn, or Panmycin). All affect gram-positive and gram-negative bacteria, spirochetes, rickettsiae, and some viruses. Tetracycline causes fewest gastrointestinal upsets.

The agents are given alone or with other compounds for febrile illness of doubtful etiology, especially upper respiratory infection. Daily oral doses need not exceed 2 gm. By vein, adults receive 300 to 500 mg. slowly every eight to twelve hours, and 5 to 10 mg. per kilogram of body weight is administered to children.

Chloramphenicol (Chloromycetin) does not affect as many organisms as the tetracyclines but is best for infections due to *Salmonella*, including typhoid and paratyphoid fever. The agent also attacks *Proteus*, *H. influenzae*, and staphylococci unaffected by other compounds. Given orally or intramuscularly, daily dosage for adults approximates 4 gm.

Erythromycin combined with antitoxin is the most powerful weapon against diphtheria, and the agent is useful for gram-positive coccal disease, especially staphylococcal.

Bacitracin is nephrotoxic and virtually limited to severe, otherwise intractable staphylococcic infection. Severe dysfunction is not noted if daily intramuscular dosage does not exceed 80,000 to 100,000 units.

Polymyxin is preferred for severe *Pseudomonas aeruginosa* infection such as suppurative meningitis. The drug can be applied topically, as well as by intramuscular or intrathecal injection. Range of action is narrow.

Neomycin has a wide scope, but systemic treatment may damage the kidneys or totally destroy hearing. Parenteral doses are not warranted except when urgently required, as for refractory staphylococcic disease. The drug is valuable in preoperative sterilization of the bowel.

Antibiotic combinations, though occasionally antagonistic in animal and in vitro experiments, are extremely useful when a patient is severely ill and the etiology is in doubt or when 2 or more species seem to be involved. After rupture of a hollow viscus or appendix, penicillin, streptomycin, and Aureomycin may be given parenterally for a short time. More definite indications are:

- Pneumococcal meningitis—penicillin and sulfadiazine
- Meningococcal meningitis—penicillin and sulfadiazine
- Severe staphylococcal disease—penicillin and bacitracin or Erythromycin
- Tuberculosis—streptomycin and PAS or isoniazid
- *H. influenzae* meningitis—streptomycin and sulfadiazine or chloramphenicol
- Brucellosis—dihydrostreptomycin and tetracycline
- *Klebsiella* pneumonia—streptomycin and sulfadiazine, possibly tetracycline
- Severe *Proteus* infection—penicillin and chloramphenicol

Medical Forum

Discussion of articles published in MODERN MEDICINE *is always welcome. Address all communications to The Editors of* MODERN MEDICINE, *84 South 10th St., Minneapolis 3, Minn.*

Complications of Ileostomy*

QUESTION: What is the best method for making a permanent ileostomy?

Comment invited from

BENTLEY P. COLCOCK, M.D.
RICHARD B. CATTELL, M.D.
GEORGE CRILE, JR., M.D.
CHARLES H. BROWN, M.D.
L. KRAEER FERGUSON, M.D.
WILLIAM B. HUTCHINSON, M.D.
J. WILLIAM HINTON, M.D.
RUSSEL H. PATTERSON, M.D.
R. RUSSELL BEST, M.D.
MARTIN A. HOWARD, M.D.

► TO THE EDITORS: The complete rehabilitation of patients with severe ulcerative colitis who require an ileostomy depends to a large extent upon a properly fitting modern ileostomy bag. A properly fitting bag, in turn, depends upon a correctly constructed ileostomy. For this reason the technic of construction and the proper care of an ileostomy are of paramount importance to these patients.

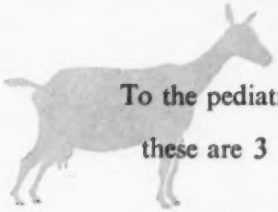
Fortunately, as Drs. Albert S. Lyons and John H. Garlock have pointed out, many of the complications formerly associated with ileostomy can be avoided by steps taken at the time of and immediately after operation. The very serious problem of skin irritation around the stoma, which makes satisfactory adherence of the bag impossible, has largely been eliminated by early protection of the skin and early application of a temporary type of ileostomy bag. Prolapse and retraction can also be avoided by proper fixation of the peritoneum of the ileomesentery to the peritoneum of the abdominal wall.

Fistulas below the level of the skin can be prevented by avoiding the use of sutures in the wall of the bowel itself. We have no objection to the use of a stab wound for the ileostomy but we have not encountered serious difficulty in bringing the ileostomy out the lower end of the laparotomy incision. The important point is the proper positioning of the ileostomy on the abdominal wall. Too vigorous dilation of the ileostomy may, of course, produce a fistula, particularly at the level of the skin, and is to be avoided. The usual cause for a fistula in the side of the ileostomy is, in our experience, erosion by a too tightly fitting ileostomy bag.

I agree completely with the authors concerning the importance and the treatment of electrolyte imbalance and temporary degrees of obstruction at the stoma.

I am pleased that Drs. Lyons

*MODERN MEDICINE, Jan. 1, 1955, p. 95.



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and Garlock do not mention the use of skin grafts to the ileostomy about which so much has been written in recent years. We have never thought that the construction of a semirigid tube on the abdominal wall was an advisable procedure for patients who wish to have their ileostomy as inconspicuous as possible. The recent suggestion that the serosa around the distal portion of the ileostomy be removed to prevent serositis and obstruction at this point is an interesting one but, like Drs. Lyons and Garlock, we have found that prompt insertion of a catheter and the use of gentle dilation will correct this complication quite satisfactorily.

BENTLEY P. COLCOCK, M.D.
Boston

► TO THE EDITORS: Medical treatment fails to relieve symptoms in ulcerative colitis in many of the severe cases and surgery becomes necessary. Ileostomy and colectomy offer the only possible cure in such patients. Drs. Lyons and Garlock properly call attention to the complications of ileostomy. These situations, which I am sure every surgeon with considerable experience with ulcerative colitis has encountered, can be reduced in frequency by meticulous attention to the construction and subsequent care of the ileostomy.

The ileostomy should be brought out through the lateral third of the right rectus muscle at least 2 in. below the level of the umbilicus. It should project for 1½ in. beyond the skin to allow for shrinkage. Skin grafts are considered ill advised. In order to prevent shift of position and prolapse, the mesentery can be anchored to the underside of the peritoneum. The opening in the abdominal wall should not constrict a normal diameter of the bowel. Special attention should be paid to the superficial fascia, which, if sutured separately, will maintain the convex surface of the abdominal wall, making application of the bag feasible in avoiding a depressed surface.

In acute fulminating cases, ileostomy is the sole procedure, and the distal ileum is brought out through a stab incision outside of the right rectus muscle in the right upper quadrant. When ileostomy can be combined with subtotal colectomy, care should be taken to close the peritoneum to the right of the ileostomy to prevent torsion or volvulus. Careful peritonealization should be carried out after colectomy to decrease the possibility of postoperative obstruction. The ileal mesentery and mesocolon can be utilized for this purpose. This is a technical detail rarely employed but quite important.

We disagree with the authors relative to producing temporary obstruction by a clamp and feel that immediate decompression with a soft rubber catheter should be done at the time of surgery and do not feel that it results in fistula. Catheter drainage is maintained for four days, after which a temporary plastic bag is cemented to the skin. The ileostomy opening should be gently dilated at least every other

(Continued on page 170)

Laxative action... *suited to her routine*

Relief of temporary constipation: Agoral is suited to the acutely constipated patient who can neither take time off for a "purge," nor time-out to answer the sudden urge induced by strong laxatives: the head of a one-man business; the executive committed to a day of important conferences; the bus driver on a long haul; people in the theatre, the pulpit, the factory, the home. For all who need relief of temporary acute constipation, pleasant tasting Agoral provides positive results without urgency.

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Dosage: On retiring, ½ to 1 tablespoonful taken in milk, water, juice or miscible food. Repeat if needed the following morning two hours after eating. Contraindications: symptoms of appendicitis; idiosyncrasy to phenolphthalein.

Supplied: bottles of 6, 10 and 16 fluid-ounces; and as Agoral Plain (without phenolphthalein), bottles of 6 and 16 fluid-ounces.

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WARNER-CHILCOTT

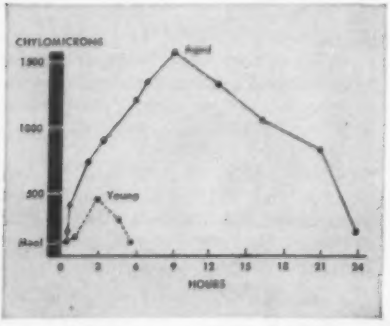
ATHEROSCLEROSIS

Revised concepts of etiology predicate new therapeutic approach

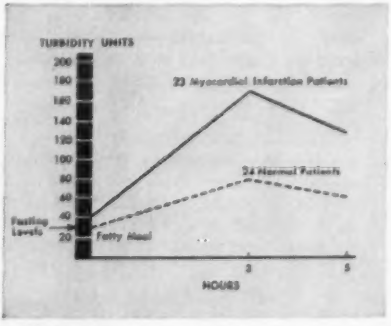
Recent studies attach increasing importance to the particle size and physical characteristics of certain blood lipids, rather than total serum cholesterol as such, in the genesis of atherosclerosis. Assays of neutral fat particles in the blood (chylomicra) following fat ingestion, and the closely related concentration of low-density "giant" lipoprotein molecules, show much greater correlation with clinical atherosclerosis than either the serum cholesterol level *per se* or the cholesterol-phospholipid ratio.

It has also been shown that (1) a high incidence of hypercoagulability and low blood heparin levels exist in patients with cardiovascular disease and atherosclerosis; (2) circulating heparin tends to decrease with age; and (3) an inverse ratio exists between the concentration of giant lipoprotein molecules and serum heparin levels.

Parenterally administered, heparin exerts a profound "clearing" action on chylomicra and the giant molecules. This action is independent of heparin's anticoagulant effect. In the treatment of atherosclerosis, the addition of choline and specific B vitamins appears to enhance heparin's efficacy. Vitamin B_{12} and folic acid aid in the synthesis of labile methyl groups and the transmethylation process. Choline specifically increases the phospholipid turnover, and parenterally administered, it has been shown to have a distinct vasodilating effect. *Most significantly, however, choline decreases the anticoagulant action of heparin, when both drugs*



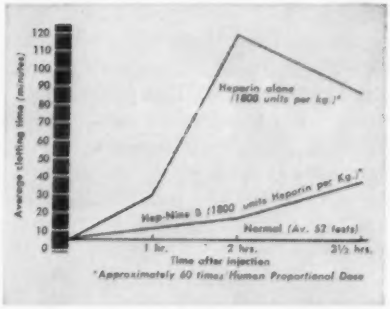
Chylomicron curves of fasting young and old subjects after a Standard fat meal. After Becker et al: Science 110:529, 1949.



Fat Tolerance in Myocardial Infarction and Control Patients. From data of Schwartz et al: JAMA 149:364, 1952.

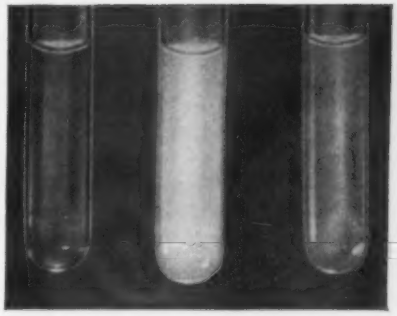
are administered simultaneously at the same site, without impairing the clearing effect of heparin. Thus the use of heparin for atherosclerotic diseases is rendered safe as a routine office procedure, without necessity for periodic clotting time determinations.

A preliminary clinical report* on HEP-NINE B—which combines heparin, choline, vitamin B_{12}, folic acid and niacinamide for intramuscular injection—indicates that the combination offers considerable promise in a variety of conditions in which atherosclerosis plays a part, such as angina pectoris, myocardial infarction, coronary disease,



Comparison of effects of Hep-Nine B and Heparin alone on clotting time

related kidney and liver diseases, diabetes mellitus, and certain cases of obesity. Pharmacologic studies showed no significant effect on coagulation time, even in dosage far exceeding that recommended. Chylomicron concentration was reduced promptly in all cases following a single injection, ranging from a minimum 29% reduction (diagnosis: anterior myocardial infarction) to a maximum of 100% (diagnosis: multiple cerebral thrombosis). In patients selected for a history of myocardial infarction or diabetes, the atherogenic index as determined by the Gofman Serum Lipoprotein Test was materially reduced in all cases without benefit of diet restriction. Of 30 patients with recurrent angina pectoris, 23 experienced marked reduction in frequency and severity of episodes. Nitroglycerine requirements were reduced and exercise tolerance was increased in all cases. No patient suffered coronary occlusion or myocardial infarction during the period of study.



Effect of Hep-Nine B on Lipemia

After 12 Hours fast	3 hours after standard fat meal	15 minutes later after 2 cc. Hep-Nine B

Read, J. T., and Obetz, R. C.: Clinical Experience with Parenteral Heparin-Lipotropic Therapy in Cardiovascular Diseases. Ohio State M. J. (In press).

day after the application of a bag. This dilation should be continued until the mucosa joins the skin, which may require three to six weeks, depending upon the amount of projection.

The authors properly emphasize the importance of maintaining fluid and electrolyte balance. We would further agree that recurrent inflammatory disease of the ileum can occur at any time after ileostomy and must be suspected when ileostomy function becomes abnormal after a considerable period of satisfactory function.

RICHARD B. CATTELL, M.D.
Boston

► TO THE EDITORS: If an ileostomy is made as short as the one in the illustration accompanying the report of the article by Drs. Lyons and Garlock, it may be difficult to avoid irritation of the skin. If it is grafted with skin, the skin graft ultimately contracts and causes obstruction. If it is left 1 or 2 in. long, the exposed serosal surface of the ileostomy becomes greatly inflamed and develops what is in reality a peritonitis of the protruded segment. In our experience almost all ileostomy dysfunction is due not to intraabdominal kinks or adhesions but to ileus and obstruction in the protruding segment of the bowel.

Dysfunction is denoted by the excessive loss of fluids and electrolytes which Drs. Lyons and Garlock discuss. The well-functioning ileostomy without obstruction practically never shows any excessive amount of discharge nor do patients require support with parenteral fluids.

The late complication of enteritis is also the result of ileostomy dysfunction, in which case chronic obstruction ends up by causing ulceration, hypertrophy, and distention of the proximal portions of the ileum. All of this can be corrected by a revision of the ileostomy.

We believe that dysfunction of the ileostomy can be prevented by making a mucosal-grafted ileostomy. The seromuscular coat of the distal half of the protruding ileum is carefully stripped off and the mucosa and submucosa are then folded back over the proximal portion of the ileostomy as a sliding mucosal graft and are accurately sutured to the skin. This covers the serosal surface from the beginning, so that no peritonitis develops. The membrane is resistant to the corrosive action of the digestive juices and does not contract with the passage of time.

GEORGE CRILE, JR., M.D.
Cleveland

► TO THE EDITORS: As a gastroenterologist, I am interested in the function of the ileostomy, because in the past malfunction and dysfunction have been frequent and have been the main deterrents to colectomy and ileostomy in patients with chronic ulcerative colitis.

Drs. Lyons and Garlock point out the importance of properly placing the ileostomy. The ileostomy should be done through a sep-

arate stab wound and be placed away from any bony prominences which might interfere with the wearing of the ileostomy bag. A site can be selected and the patient can wear the bag as a trial for twenty-four hours preoperatively to be sure the site selected is a good one.

Recently, Drs. Crile and Turnbull (*Ann. Surg.* 140:459-466, 1954; *Modern Medicine,* Feb. 15, 1955, p. 100) and Turnbull (*Am. J. Surg.* 86:617-624, 1953) found that ileostomy dysfunction and excessive loss of fluids with resulting electrolyte imbalance were due to partial obstruction of the ileostomy. By doing a mucosal graft on the serosal surface, such peritonitis is prevented and the syndrome of ileostomy dysfunction, loss of fluids, and electrolyte imbalance does not occur. Skin-grafting the ileostomy as suggested by Dragstedt partially meets this problem, but we have had a number of patients who developed strictures in the skin-grafted ileostomy six months to two years after the operation.

As a gastroenterologist, I have had the opportunity to observe the patients on whom a mucosal graft was done. There has been no evidence of ileostomy dysfunction and no excessive loss of fluids or electrolytes except in 2 individuals who had staphylococcic enteritis after surgery. In contrast to Drs. Lyons and Garlock's report, these 2 patients responded to the administration of antibiotics alone, as we believe most patients with this type of enteritis should.

The lack of ileostomy dysfunction in patients who have had the mucosal graft ileostomy has largely solved the problem of the ileostomy. The excellent results with the mucosal graft ileostomy and the improvement in ileostomy appliances have made us much less reluctant to recommend ileostomy and colectomy in patients with severe toxic or longstanding chronic ulcerative colitis.

CHARLES H. BROWN, M.D.
Cleveland

► TO THE EDITORS: I agree with Drs. Lyons and Garlock that an ileostomy should not be performed when there is any alternative; however, the alternative must provide the patient a normal social and economic life. If the alternative means that the patient will be a chronic invalid, unable to engage in normal activities, then I think the ileostomy is the lesser of two evils. After considerable experience with ulcerative colitis and patients with ileostomy, I find that a patient rarely is unwilling to accept the ileostomy when compared to the invalid state. An ileostomy limits the patient's activities very little, except perhaps in contact sports.

An ileostomy works very little hardship if the intestinal secretions can be collected conveniently and kept away from the skin of the abdominal wall. We have found that the cement-on bag gives the best results in this respect and, therefore, care must be taken in placing the ileostomy so that the bag can be conveniently worn.

Complications seen after ileos-

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fruit juice . . .

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SQUIBB

tomy in my experience are obstruction and prolapse. Obstruction, as a rule, has been at the skin surface and has been due to contraction of this area. So far, I have excised a small disk of skin at the site where the ileostomy is to be placed. The disk should be approximately the size of a quarter. This wound is carried through the abdominal wall and peritoneum and a previously prepared area of ileum is brought out through this opening. The ileum should extend 1 to 1½ in. beyond the skin surface. It is fixed in this position by suturing the mesentery of the ileum to the abdominal wall at the site where the ileum pierces the wall. Sutures between the skin, fascia, and ileum are avoided because of the danger of fistula formation. No sutures are placed. In order to avoid scar tissue formation in the exposed area, the gut is everted so that the mucosa is brought down over the protruding ileum and sutured to the skin surface with approximately 8 interrupted cotton sutures. The protruding ileum is thus protected by the mucosal epithelium and the scar tissue which often forms a constriction at the ileostomy is avoided.

Stenosis can be avoided by excising a disk of skin large enough to permit the gut to pass through the abdominal wall and by daily dilation of the ileostomy with a finger.

Prolapse of the ileostomy occurs when the opening in the abdominal wall is made too large. I do not believe that fixation of the mesentery in the abdomen prevents prolapse. Peristalsis will carry the intestinal wall out through the opening if it is large enough. One of the most important points in making an ileostomy is to know how large the opening should be. It is better to err on the small side.

I do not like the skin-grafted ileostomy because, in my experience, it produces stenosis and constriction both at the junction of the skin of the abdominal wall with the graft and where the graft and the mucosa of the ileum join. This, perhaps, can be taken care of by dilation but with more difficulty than when the ileum is brought out without graft.

L. KRAEER FERGUSON, M.D.
Philadelphia

► TO THE EDITORS: The following must be carefully considered in the construction of a permanent ileostomy if the results are to be uniformly satisfactory:

A separate opening in the right lower quadrant at the lateral edge of the right rectus on a line between the symphysis and the anterior superior iliac spine is probably the best location for the ileostomy. The opening in the abdominal wall through which the ileostomy is made should be incised in such a manner that no obstruction occurs at a later date. Partial obstruction causes intestinal dilatation with excessive diarrhea and cramps, then fluid and electrolyte loss. Periodic intubation of the ileostomy may become necessary for decompression under such circumstances.

Sutures should not be used to anchor or fix the ileum in the an-

(Continued on page 178)

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*Eisfelder, H. W.: Am. Pract. & Dig. Treat., 5:778 (Oct. 1954).

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terior abdominal wall, as fistulas frequently result. The ultimate goal for maximum function and cleanliness is to have an ileal stump protruding approximately 1 in. above the skin surface. The mucosal graft, recently reported by Dr. George Crile, Jr., is stated to reduce inflammatory changes in the stoma and would have great merit. I have successfully everted the entire wall rather than just the mucosa.

Internal fixation of the bowel must be very carefully accomplished by suturing it to the anterior peritoneum. This is aimed at preventing prolapse and herniation of bowel contents around the ileum. Intubation and finger dilation, with the hazard of splitting the bowel and producing fistulas, will rarely be necessary if the above principles are adhered to.

If colectomy is not immediately done, the end of the distal ileal segment should not be closed and left in the abdominal cavity but should be brought out through the abdominal wall. This may prevent a fistulous tract which on occasions will find its exit alongside the proximal permanent ileostomy.

WILLIAM B. HUTCHINSON, M.D.
Seattle

► TO THE EDITORS: It is now generally conceded that a 1-stage colectomy is preferable to the multiple-stage operations for ulcerative colitis. This gives a wider choice in the placement of the ileostomy.

Drs. Lyons and Garlock have emphasized the suturing of the mesentery to the anterior parietal peritoneum to prevent a prolapse of the ileostomy. This procedure is essential and we have used it for many years. Instead of employing a separate opening for the ileostomy, we have sutured the mesentery to the anterior parietal peritoneum for a distance of at least 6 to 7 cm. The ileostomy is placed to the right edge of the rectus muscles, and a transverse incision is always used just above the umbilicus.

In this way, prolapses have been most infrequent. Care is taken not to suture the bowel to the fascia or peritoneum as the incidence of fistulas is thus increased. Likewise, finger dilatation is rarely used and unless there is increasing fluid drainage, catheters are never inserted because of fear of trauma.

J. WILLIAM HINTON, M.D.
New York City

► TO THE EDITORS: In certain cases, ileostomy is necessary to save a life. The procedure should be performed with the idea that the ileostomy is going to be permanent because, due to the extensive changes that have taken place in the colon, we are seldom able to reestablish the continuity of the bowel.

We agree that it is a poor policy to place the permanent ileostomy in the exploring abdominal incision. We prefer a new, stab-wound type of incision through all layers except the skin. We prefer removing a button of skin and either immediately or as soon as possible suturing the ileal mucosa to the skin, attaching it all around. We do this with interrupted fine chromic or

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terior abdominal wall, as fistulas frequently result. The ultimate goal for maximum function and cleanliness is to have an ileal stump protruding approximately 1 in. above the skin surface. The mucosal graft, recently reported by Dr. George Crile, Jr., is stated to reduce inflammatory changes in the stoma and would have great merit. I have successfully everted the entire wall rather than just the mucosa.

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plain catgut sutures. We believe that it is helpful after the mucosal skin suturing to inject the area in 5 or 6 spots around the circular wound edges with 1,000,000 units of penicillin in saline solution.

We have no trouble about the ileostomy contracting down if the mucosa is sutured to the skin. If the bowel is simply pulled out and clamped and then left protruding for several days or weeks, the exposed bowel wall between the mucosa and the skin necessarily fills up with granulation and fibrous tissue. A contracting scar will thus result around the entire circumference of the bowel.

We agree that the mesentery of the ileum should be pulled flush with the peritoneal wall and the mesentery should be sutured to the peritoneum and the deep fascia. This will prevent intussusception or prolapsing of the ileum. We like to suture the bowel wall to the deep fascia whenever possible, but if one of these stitches penetrates through all layers of the bowel a fistula will almost surely result.

The introduction of tubes into the ileostomy opening is extremely dangerous. The softest tube introduced in a most careful manner will at times penetrate the bowel. I have done this myself and I have seen it done by other men. I often say that the only trouble I get into with these ileostomies is when I start handling them with my finger and with tubes. Normal peristalsis will nearly always take place and the bowel will empty sooner or later without any stimulation or irrigation on the surgeon's part.

In our best hospitals now the resident staff has become so versatile in maintaining electrolyte balance and proper protein and blood levels that this side of the case is well taken care of.

It is assumed further that the proper bag will be applied and well sealed, that the diet and medications will be correct, and that the complications mentioned by the authors will be watched for.

Furthermore, a strong personality on the part of the family physician and surgeon and often a psychiatrist must dominate the patient.

The best results that we have seen have been in younger people who, when their fecal stream was diverted by a proper ileostomy, seemed to get a new perspective on life and new interests. Their improvement is often remarkable.

RUSSEL H. PATTERSON, M.D.
New York City

► TO THE EDITORS: We agree with Drs. Lyons and Garlock that a permanent ileostomy should always be established through a separate stab wound incision. A small circular segment of skin is excised and the raw edge of the divided mesentery of the ileum is attached to the anterior parietal peritoneum by 4 or 5 interrupted catgut sutures. This usually prevents any prolapse.

Sutures should never be inserted through the bowel wall to attach the ileum to the peritoneum or to the fascial layers. In most cases, inflammatory edema and cellulitis with functional obstruction take

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place, although a discharge from the stoma of the ileum continues.

In our experience, dilation with cervical dilators, insertion of catheters, and protection of the skin by various methods do not always prove satisfactory. On a few occasions, a skin graft was placed on the protruding ileum and this seemed to help temporarily, but here again some difficulties were encountered. These grafts were usually not permanent.

More recently we have favored the method of Turnbull whereby the peritoneum of the protruding stump of ileum is peeled off and the mucosa is then everted down over the area and secured by a few sutures to the skin. It is difficult to imagine that such a small area of serositis or peritonitis could play such an important part in the downhill course of some of these patients. However, coupled with the obstructive element, this may be the underlying cause for the disturbing complications encountered. In any event, this latter technic is an improvement.

In retrospect, it seems probable that the skin grafts delayed and lessened the localized serositis and peritonitis and functional obstruction. Excision of the serosa appears to be the better solution for the problem. An inexpensive, temporary, disposable, plastic type of bag applied after the first twenty-four hours is also useful in the management of the early ileostomy as well as in the permanent management of ileostomy drainage.

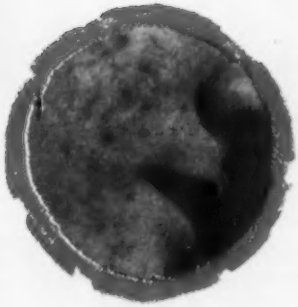
R. RUSSELL BEST, M.D.

Omaha

► TO THE EDITORS: Ileostomy, when performed for chronic ulcerative colitis, is usually permanent. Therefore, a divided ileostomy about 14 to 20 in. from the ileocecal valve with the ends placed in separate incisions is indicated. The proximal ileum, in my opinion, should be placed in a small stab type of incision well away from the operative incision. The best place is usually 2 in. below the umbilicus and 2 to 3 in. to the right of the midline.

The distal nonfunctioning ileum should be located in the operative incision which is best made in the upper inner right rectus region. The incision can be made in the low midline if desired. This affords 3 distinct advantages. First, the right rectus incision provides direct access to partial removal of the colon if necessary at a later date. Second, if the functioning ileum is placed in a separate incision, infection is much less apt to occur. Third, the possibility of retraction and prolapse of the ileum is lessened. The free edge of the mesentery of the proximal ileum should be sutured to the under surface of the anterior peritoneum.

Two of the most common complications of ileostomy are obstruction and ileitis occurring on the terminal 2 in. of the ileum protruding beyond the skin level. This inflammation may extend along the ileum 6 to 10 in., producing definite obstructive symptoms. Dragstedt attempted, without success, to overcome this by skin grafting 2 in. of ileum above the skin level. Turnbull more recently has made a great contribution by stripping the serosa



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1. Shapiro, I.: Postgrad. Med. *15*:503 (June) 1954; J. M. Soc. New Jersey *52*:6 (Jan.) 1955.
2. Shapiro, I.: J. M. Soc. New Jersey *50*:17 (Jan.) 1953.

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and muscularis and turning the mucosa back down, if possible, to the skin edge, thus preventing ileitis in the iliac snout. When the surgeon prevents temporary ileitis, he almost automatically prevents the second complication of early partial obstruction. Early dysfunction of the ileum may be partially overcome by placing a soft catheter in the ileum at the time of surgery.

If the ileostomy stoma projects 1½ to 2 in. above the skin, a temporary bag may be secured for two weeks and a semipermanent bag the next three to four weeks. The Koenig-Rutzen bag may be firmly secured after four to six weeks. This prevents excoriation and discomfort.

MARTIN A. HOWARD, M.D.
Portland, Ore.

Local Anesthesia in Obstetrics*

QUESTION: Is local anesthesia by pudendal block satisfactory for delivery?

Comment invited from

BERT B. HERSHENSON, M.D.
J. P. GREENHILL, M.D.

► TO THE EDITORS: Local anesthesia by pudendal block is satisfactory for delivery in selected instances only. Our policy regarding the selection of a regional analgesic procedure, such as local anesthesia by pudendal block, is limited to [1] patients with an active respiratory infection; [2] those having recently ingested a meal; and [3] those with disturbances of renal, pancreatic, or hepatic functions. The maturity of the fetus may also influence the selection of an anesthetic procedure.

If the patient is to receive a pudendal block, as recommended by Dr. J. R. Harris, Jr., she must be cooperative, understand the instructions given to her, and be able to tolerate a certain amount of pain and discomfort. She should be instructed to differentiate the sensations of touch and pressure from traction and other uncomfortable sensations that occur during delivery. A patient who resists this form of obstetric anesthesia is a poor candidate.

A preliminary dose of hypnotic medication, insufficient to produce confusion, should be administered to help allay the patient's apprehension. This same preliminary drug may minimize some of the potential toxic effects of the local anesthetic agent. Toxic effects may occur as the result of accidental intravascular injection of the local anesthetic agent, overdosage from rapid absorption, hypersensitivity, injection of a concentrated solution of the agent, or the patient's impaired detoxifying mechanisms.

The agents and technics selected for preanesthetic medication during labor, including the anesthesia selected for delivery, should constitute an integrated plan. Anesthetic agents and technics are not substitutes for judgment, gentleness, skill, and alertness. Experience teaches the prudent physician the futility of standardizing the obstetric anesthetic procedure for all patients. The most important factors in achieving safer obstetric anesthesia

(Continued on page 188)

*MODERN MEDICINE, Jan. 1, 1955, p. 102.

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REFERENCE: 1. Kirwin, T. J., Lowsley, O. S., and Menning, J., *Am. J. Surg.* **62**:330-335, December 1943.

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are the constitution of the obstetric team and the environment under which it functions.

BERT B. HERSHENSON, M.D.
Boston

► TO THE EDITORS: From a statistical viewpoint, spinal anesthesia is the most dangerous of all forms of anesthesia for pregnant women. The risk of death is not its only drawback; headaches occur often, there is a pronounced drop in blood pressure level in a considerable number of patients, and incidence of complications from the central nervous system is far greater than is generally assumed.

The most important factor in use of spinal anesthesia is the anesthetist; the drug and method are of secondary importance. Some anesthetists nevertheless admit that the method and anesthetic are responsible for some failures. Since even trained anesthesiologists encounter complications with spinal anesthesia in obstetrics, it is unwise to acclaim it as absolutely safe and to say that it can be used by anyone who knows how to perform a spinal puncture. Spinal anesthetics should be given only by well-trained anesthetists, not by obstetricians. Most of the enthusiastic advocates of spinal anesthesia in obstetrics fortunate enough not to have fatalities have observed occasional near deaths which have given them terrifying moments, even though these moments were brief.

The future will decide whether spinal anesthesia for obstetric patients will lose its popularity. Women who are to give birth to babies are essentially normal persons going through a physiologic process, and there is no need to take risks. If relief from pain is necessary, the least harmful drugs and procedures should be used. In case of cesarean sections, whenever possible, the safest of all procedures—direct infiltration—should be chosen.

When use of local anesthesia is inadvisable or not feasible, an inhalation agent should be used, but far more women than is generally believed can be delivered under local infiltration or block anesthesia other than spinal. This was pointedly demonstrated at Chicago Lying-in Hospital before the advent of saddle block anesthesia; before 1945, local infiltration anesthesia was used in over 80% of patients. Therefore it is not asking too much of obstetricians that they use more local and less spinal anesthesia in their practice.

J. P. GREENHILL, M.D.
Chicago

Amputation Through the Knee*

QUESTION: When below-the-knee amputation is impossible, what procedure is advisable?

Comment invited from

S. PERRY ROGERS, M.D.
CHARLES O. BECHTOL, M.D.
WALTER F. BECKER, M.D.

► TO THE EDITORS: I reported a series of cases comparable to that of Col. Joseph W. Batch, Col. August W. Spittler, and Capt. James G. McFaddin just fourteen years before their publication. I accept

*MODERN MEDICINE, Jan. 15, 1955, p. 127.

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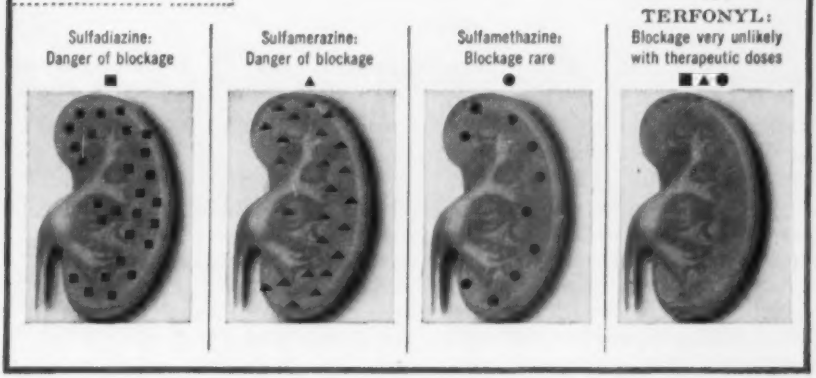

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their indications and I heartily agree with all of the advantages that knee disarticulations possess over any amputation through the thigh.

The capacity of these stumps for end weightbearing is attributable not only to the fact that all of the tissues at the end of the stump are physiologically adapted to withstanding pressure but also to the unequaled extent of horizontal surface provided. For this purpose I believe that the lower pole of the patella should lie in a plane horizontal with the lower surfaces of the femoral condyles, and it has been my experience that it will not stay there unless it is fastened directly to the femur. If my "dovetail-mortise" proves difficult, the patella may be anchored with a nail or a screw, or even a removable wire.

Anything that a thigh stump in a suction socket can do, a knee disarticulation stump can do better and longer, if it is properly fitted. The Advisory Committee on Artificial Limbs of the National Research Council has only recently interested itself in the problems peculiar to the fitting of this stump. Those of us who believe that this amputation is the best thing available above a good Syme sincerely hope that this committee, through one of its prosthetic devices research projects, will come up with socket and joint and harness designs which will be adapted by commercial manufacturers and thus make available to the knee-joint amputee a limb of merit comparable to that of his stump.

S. PERRY ROGERS, M.D.
El Paso, Tex.

► TO THE EDITORS: The selection of the level for amputation above the knee depends upon evaluation of several factors. The decision can best be reached by a consultation between the surgeon, members of the department of physical medicine, and the prosthetist who will manufacture the limb. Each of these specialties will play an important part in the eventual rehabilitation of the amputee. The factors to be considered are the age of the patient, the occupation, and the cost and type of prosthesis.

A young, active patient with good balance will get most effective and useful function from the so-called suction-socket type of prosthesis. Experience throughout the country during the last ten years has shown that the suction-socket prosthesis is difficult to fit to a stump that is too long. The most successful fittings of the suction socket have been in amputations which are 2 to 3 in. above the adductor tubercle. Patients with Gritti-Stokes or Callander amputations usually eventually discard suction sockets even though they may wear them successfuly for a year or two.

In the older age group, fitting of a suction socket is usually rather difficult. The fitting is tedious and requires considerable cooperation from the patient. Older patients obtain good function from an end-bearing prosthesis after a Callander or Gritti-Stokes amputation. If the amputation must be done above this level, a conventional ischial-bearing prosthesis with a pelvic belt is used. A knee disarticulation is also a satisfactory type of amputa-

from rigidity to relaxation

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to relieve rheumatic pain

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tion for older persons. Because of technical difficulties, many limb-fitters do not like to manufacture this type of prosthesis. Consultation with the prosthetist therefore should be obtained before a knee disarticulation is performed.

The successful use of the suction socket is dependent upon slight positive pressure while the amputee is bearing weight and a slight negative pressure plus the friction of the skin against the socket wall while the leg is being swung forward. In some occupations which require climbing a ladder or crawling about under an automobile, the suction-socket type of prosthesis may eventually lose its suction and fall away from the stump.

If it is important to keep the cost of the prosthesis at the lowest possible level, the standard wooden socket with a metal pelvic belt which is fitted to an amputation through the lower third of the femur is probably the most durable.

As is the case with any new and successful device, the suction-socket prosthesis has achieved a greater popularity than it actually deserves. There is no question that a properly fitted above-knee suction-socket prosthesis offers ease of control, lack of skin irritation, and a feeling of lightness which offers considerable advantage to the amputee. There are several groups of amputees, however, who usually have trouble with a suction-socket prosthesis and in whom this prosthesis is usually contraindicated. Older persons usually lack the muscular type of stump and generally are not psychologically suited to the prolonged fitting technic. Very long or very short stumps are also difficult to fit with suction sockets.

CHARLES O. BECHTOL, M.D.
New Haven, Conn.

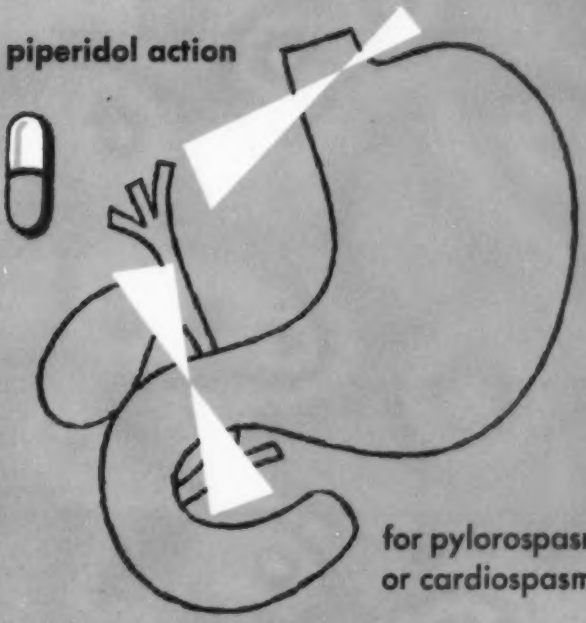
► TO THE EDITORS: The complications of chronic occlusive arterial disease are responsible for the majority of lower extremity amputations in civilian practice. When above-the-knee amputation is required, I usually employ the Callander supracondylar amputation. Long anterior and posterior flaps are created, all muscles are severed through their tendinous insertions, coaptation of muscle and fascia is avoided, and free drainage from end of the stump is established.

The skin flaps are of equal length and are very loosely approximated with a few widely spaced sutures. This avoids all tension and affords easy drainage. The division of muscles through their tendinous portions reduces blood loss and possibly renders less likely the invasion of the muscle bundles by virulent microorganisms. A tourniquet is unnecessary. The posterior tissues retract to a greater degree than the anterior, thereby obliterating dead space and ultimately displacing the suture line posteriorly.

I believe these principles are still important despite the introduction of antibiotics, liberal use of blood transfusions, and other measures which make amputation much less dangerous than when Dr. Callander described his operation.

WALTER F. BECKER, M.D.
New Orleans

piperidol action



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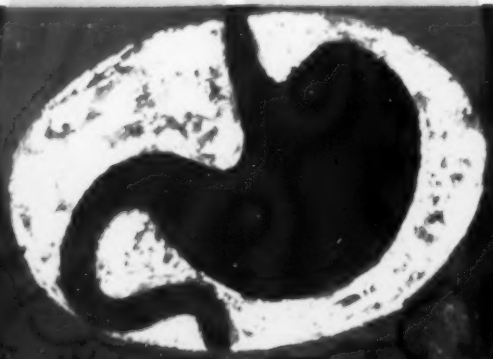

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George Schochet, M.D.
Baltimore

Mail your caption to The Cartoon Editor Caption Contest No. 1 MODERN MEDICINE 84 South 10th St. Minneapolis 3, Minn.

Diagnostix

Here are diagnostic challenges presented as they confront the consultant from the first clue to the pathologic report. Diagnosis from the Clue requires unusual acumen and luck; from Part II, perspicacity; from Part III, discernment.

Case MM-286

THE CLUE

ATTENDING M.D: Two days ago, a 60-year-old woman was admitted to the hospital with severe right lower quadrant pain of four days' duration associated with nausea but no vomiting.

VISITING M.D: Has she had a previous appendectomy?

ATTENDING M.D: Yes. The pain has not changed appreciably in intensity since onset immediately after a meal but is severe enough to require injection of codeine. The patient passed a tarry stool and gas by rectum shortly after admission. That is about all there is to the immediate episode.

VISITING M.D: Then there were other episodes? How often have they recurred, and what was the first one?

ATTENDING M.D: The patient was in excellent health until eighteen months ago, when she had the first of about 8 attacks of severe epigastric pain.

VISITING M.D: The pain was epigastric? But I thought you said that her pain occurred in the right lower quadrant.

ATTENDING M.D: I did, but this is the first time pain has been located in that area. The patient was hospitalized during the second episode, and a serum amylase of 600 units per 100 cc. was found. Her gallbladder was removed, and the pancreas was explored and found to be thickened.

VISITING M.D: How did the gallbladder appear? Were there any stones?

ATTENDING M.D: Yes, a great many. The common duct was thickened but had no stones. The van den Bergh reaction was normal. The patient was hospitalized again after another attack five months later, and the serum amylase was again quite high, vomiting was considerable, and an intestinal obstruction was suspected. How-

ever, laparotomy did not disclose anything abnormal.

VISITING M.D: Quite a bit of surgery. By the way, was the woman examined for porphyria?

ATTENDING M.D: Yes, with negative results. Again she recovered, and she refused hospitalization during subsequent attacks. She began to lose weight—about 40 lb. up to the present time—and her appetite is very poor. A malignant lesion was suspected, but extensive studies failed to localize a tumor.

VISITING M.D: Were gastrointestinal roentgenograms made?

ATTENDING M.D: Yes, of the small intestine, stomach, and colon, but they were all normal. Then, the patient had another severe attack of epigastric pain. A strangulated hernia was suspected, and surgery was scheduled. However, the pain subsided, and the woman refused the operation. When her present attack began with pain in a different location, she made an appointment in our outpatient clinic but was unable to keep it. A home call was made, and she was brought to the hospital by ambulance.

PART II

VISITING M.D: *(Entering the patient's room)* Here we have an elderly woman with repeated episodes of abdominal pain, loss of weight, and 2 operations which gave her no relief. I am impressed by the elevated serum amylase and the negative pancreas at the first operation. The tarry stools may be an important clue. When were they first noted?

ATTENDING M.D: One week before the present attack.

VISITING M.D: *(Examining the patient)* Heart and lungs are normal. The abdomen is distended and moderately tympanitic, and I can hear borborygmi. Tenderness and voluntary spasm are noted over the entire abdomen, especially in the right upper quadrant, where a large mass is palpable. The mass seems to be movable; I cannot be sure if it is attached to the liver. Rectal and pelvic examinations are negative, as is the rest of the examination. There are no palpable nodes.

ATTENDING M.D: I thought that she had a Meckel's diverticulum until I got the report of the barium enema this morning. *(He hands films to the Visiting M.D.)* The radiologist describes a filling defect in the right portion of the transverse colon and raised the question of malignant disease.

VISITING M.D: The lesion in the roentgenogram is quite small, and the palpable mass is large. The upright films of the abdomen show no gas under the diaphragm or in the bowel. I detect no fluid. What were the laboratory findings?

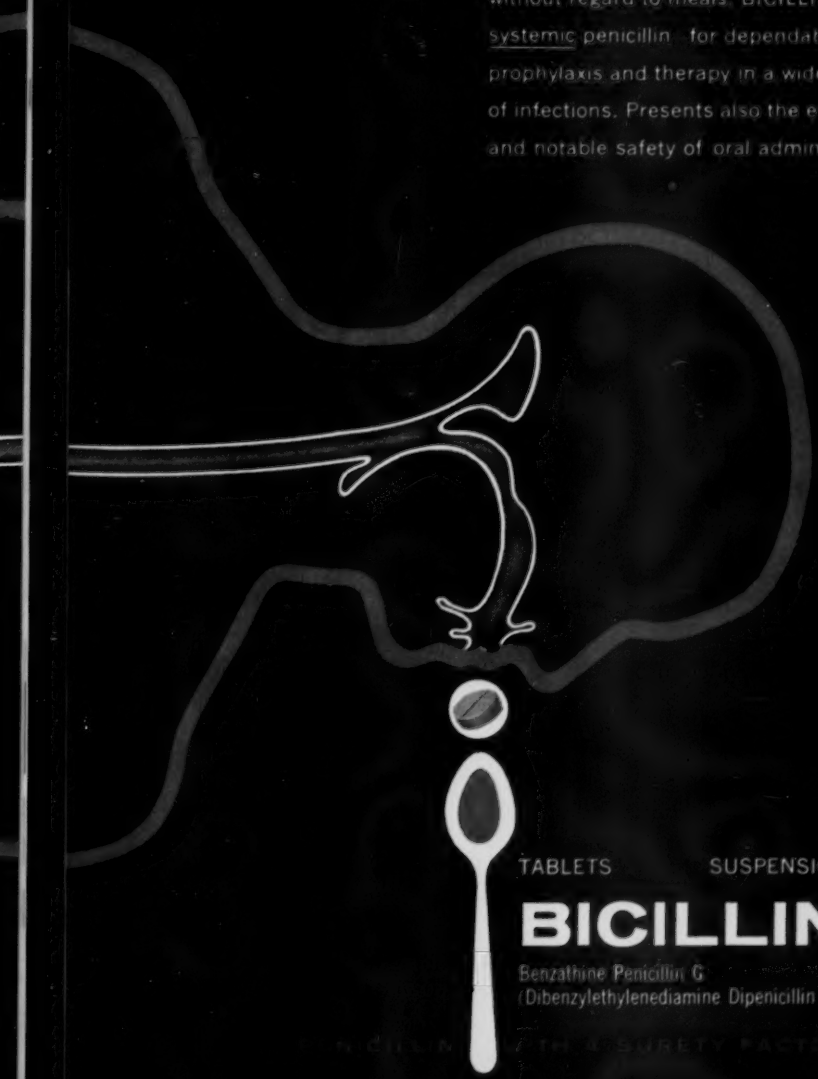
ATTENDING M.D: Serum amylase, 300 units; urinalysis, normal except for 2+ albumin; hemoglobin and red cell counts, normal; and white cell count, 10,000 with a normal differential.

VISITING M.D: I am surprised. Has she had fever or chills?

ATTENDING M.D: Her temperature

(Continued on page 200)

When you prescribe oral forms of BICILLIN, you ensure penicillin absorption. This is the safeguard afforded by BICILLIN's unique durability in gastric juice...acid buffers are never needed. Administered without regard to meals, BICILLIN means systemic penicillin...for dependable prophylaxis and therapy in a wide range of infections. Presents also the ease and notable safety of oral administration.



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has been 101 and 102° F. No chills. White cell count was repeated this morning and again was normal. Nonprotein nitrogen is 70 mg. per 100 cc., and the van den Bergh reaction is 0.8 mg. per 100 cc. direct and 1.3 mg. indirect. Stools are 3+ positive guaiac.

PART III

VISITING M.D: The question apparently is: Does the patient have a malignant lesion originating in the colon, perhaps a polyp, or does she have pancreatitis? With pancreatitis, right lower quadrant pain is doubtful, and tarry stools are unusual but could occur if inflammatory reaction and congestion in the bowel were considerable. Is there back pain?

ATTENDING M.D: The patient has never mentioned back pain.

VISITING M.D: This is most unusual with acute pancreatitis. We do not know how extensive the examination of the pancreas was at the first operation. Fat necrosis is characteristically in the retroperitoneal area behind the pancreas and below the transverse colon.

ATTENDING M.D: We have only a typewritten transcript of the surgeon's note which doesn't give details.

VISITING M.D: I doubt whether this woman has a ruptured viscus and abscess or peritonitis. One could hardly explain a condition of this duration on the basis of emboli to the bowel. The heart is normal. The mass, elevated amylase, the recurrent severe pain changing in location, and tarry stools must be explained.

ATTENDING M.D: The normal leukocyte count is not consistent with an abscess.

PART IV

VISITING M.D: I think the woman should be explored again. My impression is that she has acute pancreatitis. I have to disregard the colonic lesion, but it should be examined at surgery. Note that the pain began after the ingestion of food. Was it a large meal?

ATTENDING M.D: Yes, a birthday celebration.

VISITING M.D: This confirms my hunch. Epigastric pain is quite consistent. The tender mass in the upper abdomen is probably inflammatory. The patient is receiving large amounts of penicillin; perhaps the inflammation is under control and the leukocytes don't pour out. At the previous

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CLINICAL DATA ON REQUEST

*Combes, F. C. & Canizares, O.: New York St. J. Med. 52:706, 1952; Marsh, W. C.: U. S. Armed Forces M. J. 1:1045, 1950.

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surgery, it was noted that the pancreas was thickened. In the gastrointestinal films, extrinsic pressure on the duodenum and the transverse colon seemed to be detectable, even though the radiologist did not comment on this. Finally, the repeated elevations of serum amylase at the time of attacks have been sufficiently high to make me disregard absence of back pain. I must conclude that she has acute pancreatitis. *(The patient is brought to surgery the next morning. Both the Visiting M.D. and the Attending M.D. are present.)*

SURGEON: There is a large cyst in the head of the pancreas. This obviously was not present at the time of the first surgery or it would have been noted. There are several smaller cysts. The rest of the pancreas is normal but quite firm.

PATHOLOGIST: *(A few minutes later, after biopsy)* Frozen sections reveal normal pancreas structure but many inflammatory cells. The ducts have a severe degree of squamous-cell hyperplasia, which is thought by some to be a cause of pancreatitis. The heaped-up cells cause the secretions to seep out into the pancreas behind the obstruction. The cysts are not neoplastic.

VISITING M.D: They are probably pseudocysts from previous necrosis of the pancreas.

SURGEON: Characteristic fat necrosis can be observed in the wall of the abdomen. *(Later)* The colon lesion is a benign adenomatous polyp, which, of course, should be removed.

Doctor to Doctor

Think of a gag that fits the illustration. For every issue a new gag is published and the author is sent $5. The May 1 winner is

Robert J. Hill, M.D.
Whitehall, Mont.

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No. 2
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"She couldn't tell me whether her urine burned because she's never tried lighting it."

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M. E. Wegner, M.D.
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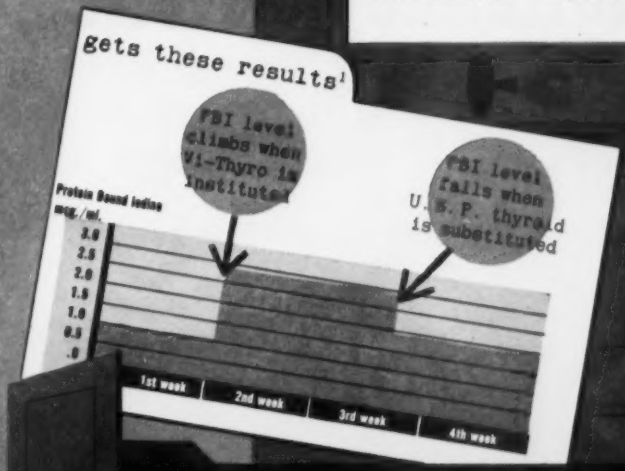

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BASIC SCIENCE *Briefs*

Renal Function in Myxedema

Glomerular filtration rate and renal plasma and blood flow appear to be significantly diminished in myxedematous patients. Inulin and *p*-aminohippurate clearance studies in 5 women with myxedema demonstrated average values of 61.7 and 256 respectively, in contrast to normal levels of 108.8 and 592. In 2 men, the average clearance values were 67.9 and 247 as compared to norms of 124.1 and 654, report Drs. Ernest Yount and J. Maxwell Little of Wake Forest College, Winston-Salem, N.C. The filtration fractions were variable.

J. Clin. Endocrinol. 15:343-346, 1955.

Source of Blood Ammonia

Elevated blood ammonia levels in patients with hepatic disease appear to be due to impaired urea conversion of ammonia released by intestinal bacteria and to shunting of portal blood past the liver. Fasting blood ammonia levels are slightly higher in patients with cirrhosis than in those without hepatic disease and are frequently elevated in patients with hepatic coma, report Dr. H. J. Zimmerman and associates of the University of Illinois, Chicago. Elevated blood ammonia associated with severe hepatitis returns to normal levels with convalescence.

Clin. Res. Proc. 3:19, 1955.

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**Chick, H.: Nutrition 7:59, 1953; Cotereau, H. et al.: Nature 161:557, 1948. Jolliffe, N. et al.: Clinical Nutrition; Hoeber, New York, 1950; pp. 586-601.*

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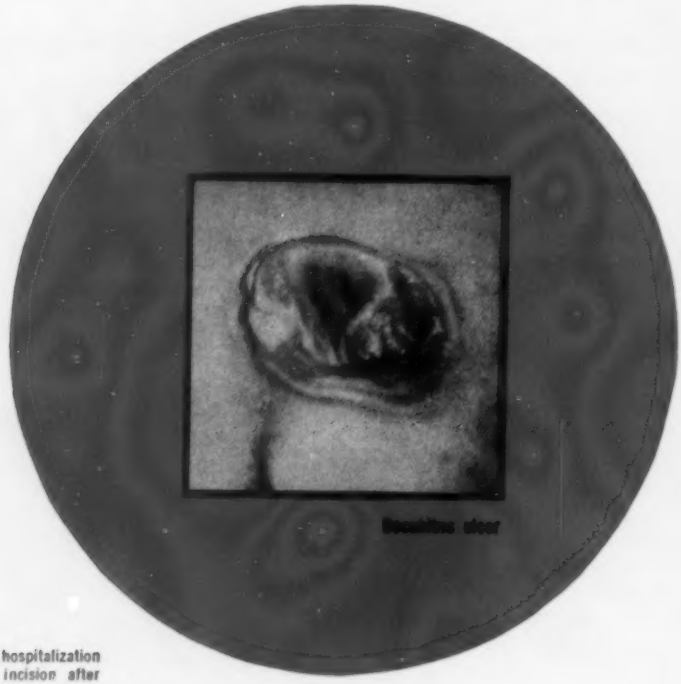

BEFORE:

Patient, 78; lengthy hospitalization from slow-healing incision after prostatectomy. Decubitus ulcer developed during 6th week. Usual therapeutic measures failed.

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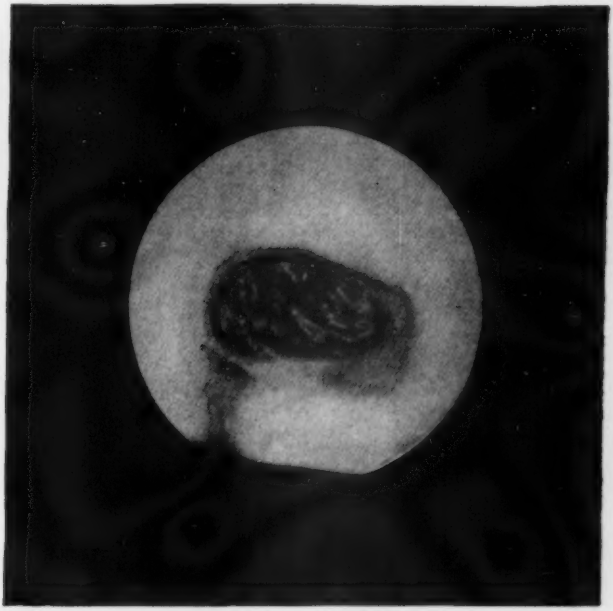

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black eyes

Vascular disorders
phlebitis
thrombophlebitis
phlebothrombosis

Ophthalmic disorders
iritis
iridocyclitis
chorioretinitis

IMPORTANT CLINICAL REPORTS:

Innerfield, L., *Trypsin Given Intramuscularly in Chronic, Recurrent Thrombophlebitis, J.A.M.A.*, 156:1056-1058 (Nov. 13) 1954.

Golden, H., *Intramuscular Trypsin, Its Effect in 83 Patients with Acute Inflammatory Disorders, Del. State Med. J.*, 26:267-270 (Oct.) 1954.

Additional clinical information on request.

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Enzyme Changes in Neoplasia

Deviations of carbohydrate metabolism in hepatomatous tissue of rats and mice appear to be due to decreased utilization or activity of glucose-6-phosphatase. Drs. George Weber and Antonio Cantero of the Notre Dame Hospital, Montreal, report that the G-6-Pase activity of liver decreases progressively during the induction period of chemical carcinogenesis with 4-dimethylaminoazobenzene. Once the hepatoma is fully formed, only slight G-6-Pase activity is detectable. Mice bearing transplanted adenocarcinomas also have decreased G-6-Pase activity, although homogenates of the tumors yield no inhibitor of the glycolytic enzyme.

Cancer Res. 15:105-108, 1955.

Tissue Repair

Vitality of damaged tissue may be preserved by Piromen, a bacterial polysaccharide. The drug apparently increases macrophage activity and vascular growth, stimulates the pituitary-adrenal system, and inhibits formation of scars. In research on peripheral vascular disease, Dr. Bernard C. Wexler and Emil Tryczynski of Morton Grove, Ill., tested Piromen on frozen rabbit ears. The best remedy was rapid thaw for two minutes in water at 42° C. and intravenous injection of Piromen, 1γ per kilogram daily for thirty days. All of 31 treated ears were saved, with 28 intact, but 21 of 31 without Piromen became gangrenous and dropped off.

J. Lab. & Clin. Med. 45:296-302, 1955.

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Fat	13.0 gm.	9.5 gm.
Carbohydrate	24.7 gm.	28.6 gm.
Iron	1.5 mg.	4.46 mg.
Calcium	.31 gm.	.58 gm.
Phosphorus	.33 gm.	.46 gm.
Vitamin A	940 I.U.	2380 I.U.
Thiamine	.14 mg.	.77 mg.
Riboflavin	.56 mg.	1.64 mg.
Ascorbic Acid	3.0 mg.	25.7 mg.
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Cholesterol	299 mg.	38.4 mg.
Calories	291 mg.	270

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*Nutritive value of Eggnog from Bowes and Church, 7th Ed. 1951.

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Intercellular Virus Lesions

A dense cytoplasmic mass can be seen by phase contrast microcinematography in cultures of human fibroblasts infected in vitro with poliomyelitis virus. The addition of type 1 or 2 virus to cultures of large fibroblasts from human tonsils results in the progressive development of an intercellular mass which ultimately destroys the cell, find Dr. G. Barski and associates of the Pasteur Institute and St. Antoine Hospital, Paris. Perinuclear thickening is followed by the appearance of a round or oval, compact, motionless, and acidophilic mass over the nucleus. As the mass increases in size, the nucleus is forced to the periphery, nuclear outline becomes irregular and faded, and the marginal cytoplasm appears to bubble. Cytoplasmic vacuolization is followed by gradual disintegration of cell outline forty to fifty hours after infection. The bubbling and vacuolization may provide a means of virus release before the cell is completely destroyed.

Proc. Soc. Exper. Biol. & Med. 88:57-59, 1955.

"You're a very stupid rat!"

Q ***What's new*** **in x-ray equipment?**

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Alcoholic Double Vision

Diplopia associated with rising levels of blood alcohol is apparently due to progressive impairment of the binocular fusion reflex. Fusion power, convergence, and visual acuity are only slightly altered at 0.05% alcohol concentrations but become greatly impaired between 0.05 and 0.15%, find Dr. Gerhard A. Brecher and associates of Western Reserve University, Cleveland. Deficient fusion reflex occurs regardless of changes in phoria or voluntary convergence. Under alcoholic intoxication, esophoria develops at 600 cm., is only slight at 82 cm., and changes to exophoria at 33 cm., so visual axes reach a position of rest at about 60 cm.

Am. J. Ophth. 39:44-52, 1955.

Telescopic Anastomoses

The small intestine and colon may be safely and rapidly anastomosed in dogs by telescoping specially prepared cuffs of distal and proximal segments. To form the cuffs, the proximal bowel is denuded of an annular segment of the seromuscular layer, 0.25 to 0.5 in. in length, and the distal bowel is stripped of the mucosal layer for a corresponding distance. The proximal cuff is then invaginated into the distal, and the coapted submucosal layers are united by a continuous mattress suture, explains Dr. John M. McCaughan of St. Louis University, Mo. Peritonitis, bowel obstruction, or hemorrhage at the anastomotic site was not observed.

Surgery 37:446-454, 1955.

Bladder Regeneration

A bladder-like pouch, capable of voluntary emptying, has been regenerated at the site of total cystectomy in dogs. An acrylic mold, connected with polyethylene tubing to the ureters and urethra, was placed in the emptied extraperitoneal space for temporary urine collection and for support of regenerating tissue, explain Dr. A. W. Bohne and associates of the Henry Ford Hospital, Detroit. Biopsies obtained at spaced intervals revealed a thick-walled inflammatory tissue three to five weeks after implantation of the mold; transitional epithelium at six to ten weeks; and the appearance of fibroblastic giant cells, fibroblasts, fibrous tissue, smooth muscle bundles, and an outer layer of fatty tissue at fourteen to sixteen weeks. After removal of the mold and catheters, the dogs were continent and able to void voluntarily.
Surg., Gynec. & Obst. 100:259-264, 1955.

Blood Cholesterol

Total serum cholesterol increases in healthy women from 163 mg. per 100 cc. at the age of 20 to 29 years to a maximum of 260 mg. in the 60's, then falls to 251 mg. in the 70's. Dr. Pearl Swanson of the Iowa Agricultural Experiment Station, Ames, and associates surveyed 184 subjects. Values apparently were not affected by body weight, basal metabolic rate, diastolic blood pressure, or dietary protein and fat.
J. Gerontol. 10:41-47, 1955.

a statement of business principles

The American Medical Association has discontinued issuance of the Seal of Acceptance for products prescribed or recommended by physicians. Issuance of the Seal imposed restrictions on the advertising of such products to the laity, "considered to be in conflict with the best experience, authoritative judgment, and basic principles in infant feeding . . ."

As the manufacturer of an infant formula M & R Laboratories recognizes an obligation to the medical profession and the public in advancing the general welfare. We affirm here the principles that have guided us during thirty years of offering Similac for the consideration of physicians.

The human infant is a dependent being, defenseless against unphysiologic foods and improper care during the first year of life.

Preventive medicine is critical to the infant, because his underdeveloped capacity for maintaining homeostasis renders him acutely vulnerable to the stresses resulting from inadequate management. For the normal infant, good nutrition is an essential consideration. It is of particular concern to the physician, and supervising it maintains the contact with the patient necessary for continued preventive care.

We hold inviolate the prerogative of the physician to prescribe infant feeding according to his judgment. The physician has the training and experience necessary to select and prescribe the formula and other elements of the dietary, and to direct the preventive care of the infant. The contribution offered by the paramedical professions can be best utilized under his supervision.

We believe it incumbent on M & R Laboratories to encourage and to participate in research in the field of nutrition, both fundamental and applied. The M & R Pediatric Research Conference program is but one instrument for achieving this objective.

Promotion of an infant feeding should be confined to demonstrating the merits of the feeding to the medical profession, and to providing the information necessary for proper use of the feeding to the allied professions.

Our representative to the physician is chosen for his integrity, is trained in the knowledge of his product and its application, and is schooled to respect the physician's position and conduct himself with propriety. His function is to develop product understanding, and to render services to physicians that will facilitate application of the product in their practice, without any attempt to incur obligation for such services.

Similac advertising is directed only to physicians and those professionally associated with them, and is concerned with the presentation of data from the scientific literature substantiating the principles underlying the formulation of the product.

M & R Laboratories believes that no action should be taken by commercial interests to produce pressures from lay sources designed to influence the physician's prescription of any product or type of product.

Efforts to create brand preference or to publicize medical concepts for commercial gain, through the use of mass media such as television, radio, newspapers and magazines, can only result in undesirable pressure on the physician from patients. Lay promulgation of brands of infant formulas or foods intended for the first year of life infringes on the right of the physician to prescribe as his judgment directs.

We believe that the public welfare and the prestige and effectiveness of medicine depend on the continued recognition of the prerogatives and responsibilities of the physician. Relegation of these responsibilities to other interests can only lead to a deterioration of medical care and a threat to national standards of health.

While M & R Laboratories transacts its affairs to make a profit for the company, we feel that this is most appropriately done by providing what we believe to be the best possible product, at the lowest possible cost, marketed under this code of business principles.

Dave Cox, Director

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LATE REPORTS *from Medical Centers*

★ U.S. NAVAL SCHOOL OF AVIATION MEDICINE, Pensacola, Fla.—Electrocardiographic examination with a solidified plaster-of-paris electrode containing sodium chloride is more rapid and precise than methods utilizing electrode paste. After moistening with water, the device may be used for as many recordings as required. Capt. Ashton Graybiel, M.C., and Lt. Louis R. Krasno, M.C., find the technic especially valuable for mass tests and complete chest surveys.

★ UNIVERSITY OF WISCONSIN, Madison—Carcinogens may cause tumor by a common mechanism. Molecules of dibenzanthracene tagged with radioactive carbon become attached to protein molecules where cancer is produced by the compound. Dr. Charles Heidelberger and associates also noted protein-binding action with similar and completely different carcinogens. The degree of interaction corresponds with the rate of malignant growth.

★ PUBLIC HEALTH SERVICE COMMUNICABLE DISEASE CENTER, Savannah, Ga.--Dimethyl dichloro vinyl phosphate (DDVP), a powerful insecticide, is much safer for people and animals than other organic phosphorus preparations now in use. DDVP is unlike DDT and rapidly kills flies resistant to the latter, find Dr. George W. Pearce and associates. Mites, aphids, and other agricultural pests are also probably susceptible. The compound is highly volatile, an advantage for crops where residues are objectionable.

★ TUFTS COLLEGE, Boston—Fetal adrenal glands grafted while still viable may relieve severe skin disease and possibly cancer. Drs. Freddy Homburger and C. D. Bonner report success in 4 of 6 patients with such conditions as pemphigus, atopic or seborrheic dermatitis, parapsoriasis, and disseminated lupus erythematosus.

★ YALE UNIVERSITY, New Haven, Conn.—During the poliomyelitis season, orphan viruses of at least 6 types frequent the intestinal tract. Although not poliomyelitis or Coxsackie strains, the organisms produce similar changes in tissue cultures. However, Dr. Joseph L. Melnick reports that no reactions occur with poliomyelitis antiserums.

★ CORNELL UNIVERSITY, New York City--Spontaneous abortion may be caused at least partly by vitamin C deficiency resulting in decidual hemorrhage. Deficit is common in pregnancy, observes Dr. Carl T. Javert. If plasma levels of vitamin C are 0.5 mg. or less per 100 cc., 500 mg. should be taken daily in fruit and supplements. In 91 of 100 women with records of habitual abortions, outcome was successful after pre- and antepartum therapy with vitamins C and K.

★ MERCY HOSPITAL, Baltimore--Capillary bleeding during anticoagulant therapy, expected in 5% of persons taking coumarin, may be prevented by hesperidin and ascorbic acid. No hemorrhages occurred in 200 patients receiving 50 mg. of each compound three times daily for two months; clotting time was 3½ times normal, reports Dr. Charles E. Brambel. Ecchymoses are usually cleared in two or three days by administration of 100 mg. of each drug four times daily when capillary leakage begins.

short REPORTS

Roentgen-Ray Carcinogenesis

The incidence of diverse neoplasms is high in rats exposed to large doses of whole-body radiation. Fibrosarcoma, carcinomas of the skin and kidney, osteogenic sarcoma, and neuroblastoma, all of which occur rarely in untreated controls, are induced in the majority of rats exposed to single doses of 660 r, report Drs. Simon Koletsky and Gordon E. Gustafson of the Western Reserve University, Cleveland. Multiplicity of benign and malignant lesions in single animals suggests a systemic factor in radiation carcinogenesis in addition to direct tissue injury.

Cancer Res. 15:100-104, 1955.

Vitamin B_{12} Absorption

Carefully selected doses of intrinsic factor enhance the intestinal absorption of vitamin B_{12}, whereas excessive amounts may decrease absorption. For patients with pernicious anemia in remission, doses of 58 mg. of intrinsic factor produce optimal absorption of 1 μg. of vitamin B_{12}, as indicated by the hepatic uptake of radioactive-tagged B_{12}, find Dr. George B. Jerzy Glass and associates of the New York Medical College, New York City. Correct dosage of intrinsic factor depends on the potency of the preparation and also on the dose of vitamin.

Proc. Soc. Exper. Biol. & Med. 88:1-5, 1955.

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vaginal gel

Parenteral Reserpine

Hypertensive emergencies may be controlled by intravenous or intramuscular injections of reserpine. Doses of 2.5 or 5 mg. for adults and 25 to 100 μg. per kilogram of body weight for children effectively reduced blood pressure to normotensive levels in all but 1 of 28 patients with progressive hypertensive cardiovascular disease, toxemia of pregnancy, or acute glomerulonephritis, report Dr. John H. Moyer and associates of Baylor University, Houston. Papilledema and hypertensive encephalopathy are also improved. After a latent period of one to three hours, the blood pressure response is maintained for two to twenty-four hours or more.

Clin. Res. Proc. 3:71, 1955.

Sunlight Sensitivity

Urticaria solaris may be ameliorated by application of protective creams combined with antihistamines or chloroquine sulfate. Quinine sulfate, 3%, menthyl salicylate, 10%, and salol, 10%, increase the filter effect of a basic cream and powder, finds Dr. A. D. Porter of St. John's Hospital for Diseases of the Skin, London. When the cream was applied to the skin of a patient sensitive to wave lengths extending throughout the spectrum from ultraviolet to infrared, formation of wheals was diminished and exposure time greatly increased. Antihistamine tablets and chloroquine sulfate in twice daily doses of 150 mg. may also decrease sensitivity.

Brit. J. Dermat. 66:417-428, 1954.

Ureterocolostomy Technic

Full thickness, end-to-side ureterointestinal anastomosis permits rapid union of the ureter lining and the bowel mucosa with very little fibrosis. The terminal end of the ureter is cut into an ellipse and apposed to the bowel without torsion or tension. Interrupted sutures of fine chromic catgut are set close together. Postoperative intravenous pyelography reveals no or only slight hydronephrosis, reports Dr. N. S. R. Maluf of Baylor University, Houston. Ureterointestinal anastomosis in the dog by the Mathison procedure, which employs a full cuff of bowel around the terminal end of the ureter as sphincter formation, or by the simple pull-through technic, with the free cut margin of ureter implanted into the lumen of the bowel, uniformly results in moderate to advanced hydronephrosis and stenosis of the ureteral stoma.

Surg., Gynec. & Obst. 100:59-68, 1955.

Cerebral Palsy Program

The annual meeting of the American Academy for Cerebral Palsy will be held October 10 to 12, 1955 in the Claridge Hotel, Memphis. Instruction will be given in the various phases of cerebral palsy, in addition to the formal program. Physicians and allied workers may obtain detailed information from Dr. Robert A. Knight, 869 Madison Avenue, Memphis 3.

Trypsin for Poliomyelitis

The antiinflammation and antiedema effects of the crystalline trypsin, Parenzyme, may reduce the toxic manifestations and arrest the paralytic processes of poliomyelitis. Given in conjunction with hyperproteinization and curarization to 51 patients with acute poliomyelitis, Parenzyme appeared to arrest paralysis within forty-eight hours, accelerate return of muscle strength, and render the patient more responsive to curare, reports Dr. George J. Boines of the University of Delaware, Wilmington. Tracheobronchial exudates become less thick, viscid, and tenacious and are more easily aspirated. The recommended dosage schedule is 0.5 cc. (2.5 mg.) of Parenzyme given deep into the buttock every eight hours for five successive days, followed by 2 daily doses for an additional seven to ten days.

Delaware M. J. 27:38-40, 1955.

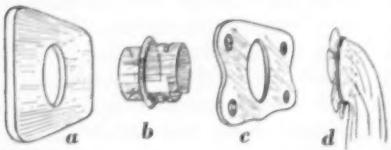
Barbiturate Antagonist

The glutaramide, NP 13, effectively counteracts the action of barbiturates. After electroshock, Dr. T. A. B. Harris of Guy's Hospital, London, has restored consciousness within about four minutes by injecting 50 mg. of NP 13 by vein to counteract 0.5 gm. of thiopentone. If no central depressant other than barbiturate is used, surgical anesthesia can also be ended without fasciculations or other adverse effects.

Lancet 268:181, 1955.

Ileostomy Device

A plastic apparatus that requires no cement is more comfortable and easier to manage than the popular rubber ileostomy or colostomy bags. The apparatus consists of a foam-rubber pad placed next to the skin (Fig. *a*), a rimmed Plexiglass cone



(Fig. *b*), a Plexiglass belt frame (Fig. *c*), and a plastic bag fastened to the rim of the cone with a rubber compression ring (Fig. *d*); a snap-on waist belt holds the sections in place. Drs. J. DeWitt Fox and Brock E. Brush of the Henry Ford Hospital, Detroit, report that the container is transparent and can be replaced in a few seconds.

J.A.M.A. 156:1398-1399, 1954.

Pulsus Alternans

As congestive heart failure progresses, pulsus alternans usually disappears. Increased ventricular filling pressure, resulting in a diastolic stretch of the left ventricle, may produce more uniform ventricular responses and diminution in alternation, explain Dr. Joseph M. Ryan and associates of Ohio State University, Columbus. When congestive failure is corrected, pulsus alternans may again become detectable.

Clin. Res. Proc. 3:10-11, 1955.

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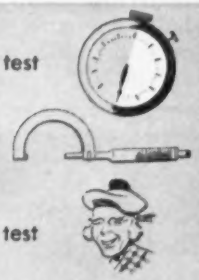

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Effective Analgesic Agent

A brand of alphaprodine, Nisentil, provides rapid analgesia of limited duration. Doses of 15 to 24 mg. effectively control chronic pain without altering normal functions or producing addiction, report Dr. Carl Gottschalk and associates of New York University, New York City. Small doses of Nisentil appear as effective as larger doses of meperidine. Scopolamine increases the sedative and analgesic properties of Nisentil. Nalline enhances the sedative effect. Nisentil, Nalline, and scopolamine in combination are particularly useful for management of postoperative pain, cystoscopic procedures, and labor. Respiratory depression, the chief untoward effect of Nisentil, is augmented by barbiturates. Atropine administered with Nisentil increases apprehension.

New York J. Med. 55:90-94, 1955.

Pernicious Anemia Therapy

Oral vitamin B_{12} without intrinsic factor may provide adequate maintenance therapy for patients with pernicious anemia. Dr. Edward H. Reisner, Jr., and associates of New York University, New York City, report that single oral doses of 1 mg. given at one- to three-week intervals are successful as a substitute for parenteral therapy in all but a few isolated cases of pernicious anemia. Relapses are controlled by doubling frequency of doses.

Clin. Res. Proc. 3:28, 1955.

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Serpasil

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a pure crystalline alkaloid of rauwolfia root first identified, purified and introduced by CIBA

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Tumor Regression

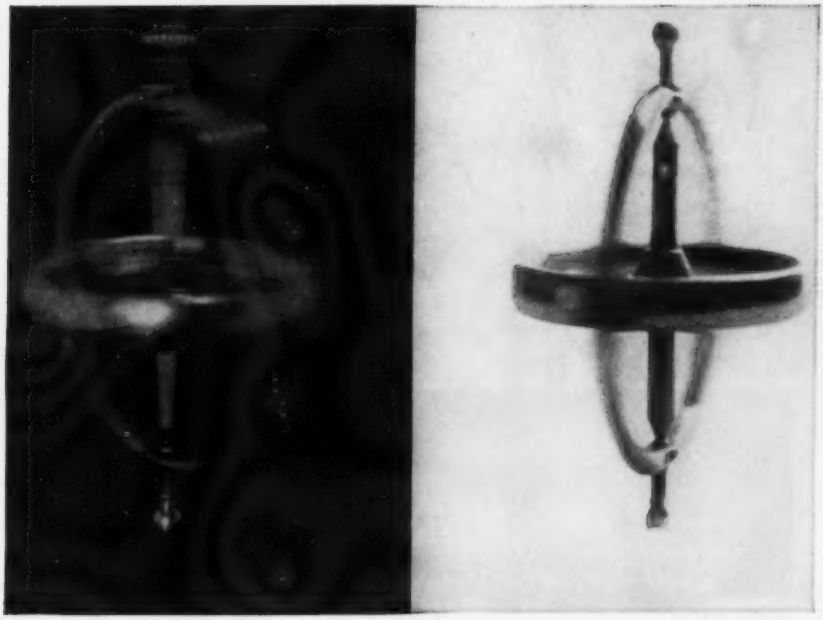
Naturally occurring or methylcholanthrene-induced hemangiomas in chickens and ducks tend to regress spontaneously. Localized reticuloendothelial proliferation in the aberrant blood channels, followed by cell degeneration, leaves a residuum of collagen-like stroma, reports Dr. R. H. Rigdon of the University of Texas, Galveston. The compact stroma may contain infiltrated lipoid cells and large, thick-walled vessels which persist from the original hemangioma. Proliferation of the reticuloendothelial tissue is apparently caused by mechanical action rather than immunologic stimuli.

Cancer Res. 15:77-79, 1955.

Vasodilative Agent

Arlidin, an aralkyl of the adrenalin-benzedrine series, appears to have rapid, prolonged vasodilative effects with little toxicity. Doses of 2.5 to 10 mg. subcutaneously or 12 to 30 mg. orally increase peripheral blood flow to the skin-muscle area, promote coronary circulation, and slightly decrease mean arterial pressure but do not accelerate pulse frequency, reports Dr. Louis Freedman of New York City. When compared to other vasodilators, Arlidin maintains the most favorable relation between increased cardiac output and blood pressure without exerting undue stress upon the heart. The agent is of therapeutic value in conditions such as intermittent claudication, early gangrene, thrombophlebitis, myalgia, and some instances of arteriosclerosis and hypertension.

Angiology 6:52-58, 1955.



a stabilizing agent for the mentally or emotionally disturbed

Unlike the barbiturates, RAU-SED is not a hypnotic when given in proper dosage and will not diminish the patient's alertness. It may be effectively employed as a tranquilizer to relieve tension or anxiety in a wide variety of conditions.

RAU-SED

SQUIBB RESERPINE

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0.5 mg. tablets, bottles of 50 and 500

1.0 mg. tablets, bottles of 30, 100 and 500

2 ml. ampuls for parenteral administration, each ml. containing 2.5 mg.

"RAU-SED" IS A SQUIBB TRADE-MARK

SQUIBB

Sequelae of Infarction

Optimal anticoagulant therapy of patients with acute myocardial infarction usually fails to influence the attendant increase in viscosity of blood, intravascular abnormalities, or formation of erythrocyte aggregates. Dr. Edward H. Bloch of Western Reserve University, Cleveland, uses a stereobinocular microscope to observe arterial blood flowing through the bulbar conjunctiva of healthy individuals and patients with acute myocardial damage. After infarction, the majority of erythrocytes form variable sized clumps which intermittently plug arterioles, venule walls become more permeable, and multiple sacculations appear. Therapy with Dicumarol, heparin, or Tromexan decreased or eliminated erythrocyte clumping in only about 35% of 75 patients with acute myocardial infarction, had no effect in 44%, and resulted in more pronounced aggregation in 21%. No comparable abnormalities are seen in arteries of healthy individuals.

Am. J. M. Sc. 229:280-293, 1955.

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water soluble vehicles • no foreign body reaction—nonmacerating
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Reduced Cholesterol Levels

Prolonged administration of sitosterol maintains low serum cholesterol levels in man. Beta-sitosterol or soysterols given to 7 individuals with hypercholesterolemia produced mean serum cholesterol reductions of 13.2% in women and 16.4% in men, report Dr. John M. Lesesne and associates of the University of Michigan, Ann Arbor. Given in concentrations of 10 to 25% for three to eight months, the plant sterols sustained cholesterol reductions without provoking untoward metabolic or hematologic effects.

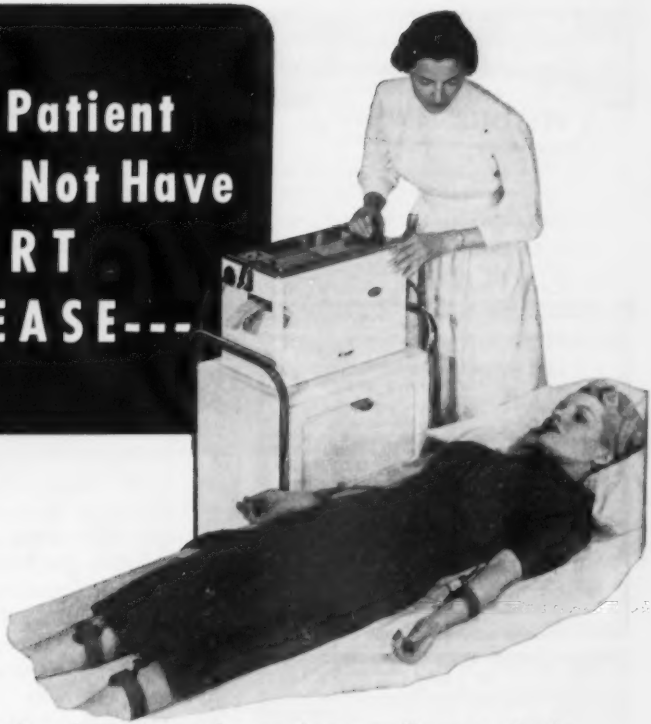
Univ. Michigan M. Bull. 21:13-17, 1955.

Insulin in Hyperkalemia

Increased plasma potassium levels in dogs with acute experimental burns are depressed by administration of insulin. Potassium concentrations are rapidly lowered in both arterial and venous channels with gradual recovery to normal levels within five hours, report Dr. Clarke L. Henry and associates of Brooke Army Medical Center, Fort Sam Houston, Tex. The maintenance of an arteriovenous concentration gradient after insulin indicates that the action is systemic.

Surg., Gynec. & Obst. 100:265-267, 1955.

This Patient Does Not Have HEART DISEASE---



It takes only a few minutes for an electrocardiogram. In the patient without heart disease, the tracing has potential future diagnostic value, since it represents "normal" for the individual and may be used for comparison.

For an accurate record obtained rapidly and conveniently, be sure to inspect the Burdick EK-2 DIRECT-RECORDING ELECTROCARDIOGRAPH.

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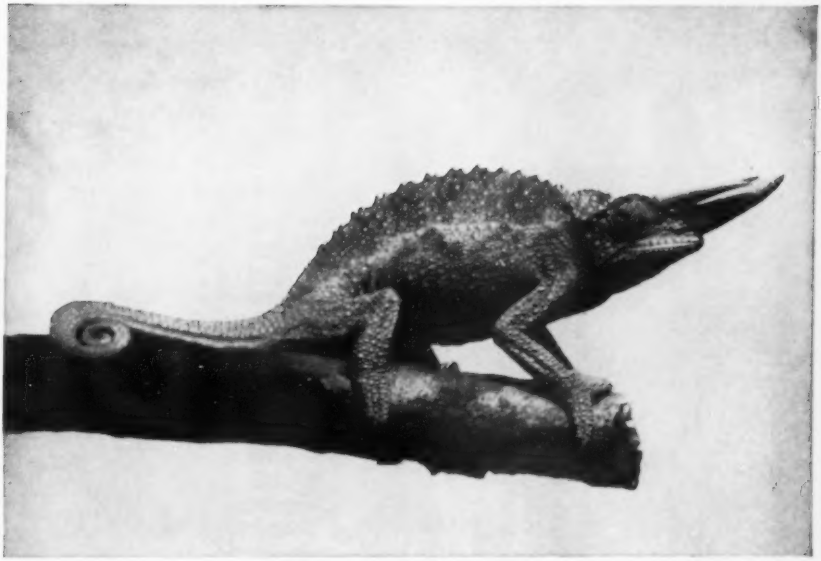
Cortisone for Leprosy

The intensive, chronic lepra reactions can be suppressed with cortisone without undesirable effects on the natural course of the disease or the therapeutic properties of antileprosy drugs. Resorption of the diffusely infiltrated lesions, fibrotic nodules, and keloid scars of erythema nodosum and erythema multiforme and improvement in general condition were noted in all of 9 lepromatous patients given long-term treatment with Cortone, report Dr. E. C. Del Pozo and associates of the Instituto de Salubridad y Enfermedades Tropicales, Mexico, D. F. Dosage varied from 25 to 175 mg. of the steroid; the higher doses were used only for initial suppression, and improvement was usually maintained by smaller doses. The therapeutic effectiveness of Cortone did not decrease with prolonged therapy. Patients intolerant to treatment with 4-4-diamine-diphenyl-sulfone (DDS) were able to tolerate the drug after steroid treatment, and the lepra reactions have not reappeared up to six months after withdrawal of Cortone.

J. Invest. Dermat. 24:51-56, 1955.

"Busby, you are *a difficult patient!"*

"I'm your neighbor from across the way. I wonder if I could borrow a cup of lubricating jelly."



Labile lizard

Singularly adapted to its equatorial African environment, Jackson's chameleon (**Chameleo jacksonii**) changes color to match mood and surroundings. Especially remarkable: eyes which independently focus forward and backward, a prehensile tail, a long sticky tongue to catch its insect prey.

Perhaps less well adapted, **Homo sapiens** often responds to stressful situations with gastric upset, peptic ulcer. When he does, pleasant-tasting TITRALAC gives relief in minutes that continues for hours. This has been shown by *in vitro* tests on 16 commonly used antacids. In this study, TITRALAC

"...brought the pH up the most rapidly and to the highest level of all the preparations which were investigated. The sustaining power was stronger, in addition."

Hammarlund, E. R., and Rising, L. W.: J. Am. Pharm. A. (Scient. Ed.) *41*:295, 1952.

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This sensitivity test shows ERYTHROCIN and the same antibiotics against a typical intestinal strain of *E. coli*. Note that ERYTHROCIN and penicillin do not affect growth of this organism—while the other antibiotics show marked inhibitory action. Since ERYTHROCIN is inactive against gram-negative organisms, *it is less likely to cause alteration in common intestinal flora—with an accompanying low incidence of side effects.*

...with little risk of serious side effects

The main reason is because ERYTHROCIN acts specifically. It destroys only harmful coccic invaders—yet doesn't materially change normal intestinal flora. *Thus, your patients rarely get side effects from* ERYTHROCIN. Nor do they get the allergic reactions sometimes seen with penicillin therapy. *Filmtab* ERYTHROCIN (100 and 200 mg.) comes in bottles of 25 and 100. Won't you prescribe *Filmtab* ERYTHROCIN—soon? Abbott

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Recurrent Cancer Prevention

Postoperative recurrences of female breast and genital cancer may be prevented by prophylactic treatment with thyroid hormone. Only 1 of 18 patients given daily doses of 1 to 5 gr. of the hormone after radical mastectomy or hysterectomy and observed from four to six years had definite recurrences, reports Dr. Alfred A. Loeser of St. Saviour's Hospital, London. Massive doses of thyroid hormone retards growth of inoperable cancers of breast and genitals.

Brit. M. J. 4901:1380-1383, 1955.

Therapy of Myxedema

Triiodothyronine, a chemically pure synthetic analogue of thyroxine, provides effective thyroid hormone therapy for myxedema. Patients with myxedema given daily oral doses of 70 to 105 μg. of *l*-triiodothyronine or 150 to 200 μg. of *dl*-triiodothyronine returned to euthyroidism in ten to fourteen days, and thyroid function remained normal for the duration of therapy, report Drs. Herbert A. Selenkow and Samuel P. Asper, Jr., of Johns Hopkins University, Baltimore, Md. Comparable effects were produced by sodium *l*-thyroxine in daily oral doses of 300 μg. Though *l*-triiodothyronine has 3 to 4 times the calorigenic effect of *l*-thyroxine, no qualitative therapeutic advantage has been observed.

J. Clin. Endocrinol. 15:285-296, 1955.

Books Received

SEGMENTAL ANATOMY OF THE LUNGS by Edward A. Boyden, 276 pp., ill., in color and black and white. The Blakiston Division, McGraw-Hill Book Co., Inc., New York City, 1955. $15

IN CONCEPTION CONTROL

prescription to fit the patient

No one method of conception control is applicable to all patients. For some, the "diaphragm-and-jelly" technic serves best, for others "jelly-alone" is adequate. Responsibility for selecting the more desirable method rests with the physician, who often considers the patient's preference.

From the physician's point of view: When life and health depend upon prevention of pregnancy, the diaphragm-jelly method becomes first choice. If certain anatomic difficulties exist such as relaxed pelvic floor,[1,2] extensive cystocele,[1-3] extensive rectocele,[1-3] intact hymen,[3] short anterior vaginal wall,[3] third degree retroversion of the uterus,[3] acute anteflexion of the uterus[3] or complete prolapse,[3] proper placement of the diaphragm usually is not feasible. Safer than jelly applied to an improperly fitting diaphragm is jelly-alone inserted into the vagina. Inability to learn the diaphragm technic also necessitates jelly-alone.

From the patient's point of view: The highly fertile multiparous patient who considers her family complete will seek the extra protection of a diaphragm. Women motivated by a morbid fear of pregnancy will prefer to reduce the risk of conception by using both a mechanical device and a spermaticide. Conversely, if there is no urgent need to avoid conception,[4,5] jelly-alone will be the choice because of its simplicity.

Dependability of each technic: Diaphragm-and-jelly offers the most dependable conception control,[1,3,6-8] with reliability of 95% to 98%.[6,7] Jelly-alone will provide a high degree of protection in nonparous women and in women of low parity.[4] Among 325 women who used jelly-alone (RAMSES Vaginal Jelly*) for 3 months to 3 years, the actual pregnancy rate was 10.82 per 100 patient-years of exposure.[4]

After the decision has been made: When the choice favors diaphragm-and-jelly, the RAMSES® "TUK-A-WAY"® kit is recommended. The RAMSES diaphragm, flexible and cushioned, provides optimum mechanical barrier with utmost comfort. With RAMSES Jelly,* it offers an unsurpassed contraception technic. Where jelly-alone is indicated RAMSES Vaginal Jelly can be confidently prescribed. *Both products are accepted by the appropriate Councils of the American Medical Association.*

Bibliography: **1.** Reich, W. J., and Nechtow, M. J.: Practical Gynecology, Philadelphia, J. B. Lippincott Co., 1950. **2.** Tietze, C.; Lehfeldt, N., and Liebmann, H. G.: Am. J. Obst. & Gynec. 66:904, (Oct.) 1953. **3.** Greenhill, J. P.: Office Gynecology, ed. 5, Chicago, The Year Book Publishers, Inc., 1948. **4.** Finkelstein, R.; Guttmacher, A., and Goldberg, R.: Am. J. Obst. & Gynec. 63:664 (March) 1952. **5.** Barnes, J.: Lancet 2:401 (Aug. 22) 1953. **6.** Gamble, C. J.: Ann. New York Acad. Sc. 54:840, May 2, 1952. **7.** Novak, E.: Textbook of Gynecology, ed. 3, Baltimore, The Williams and Wilkins Co., 1948. **8.** Council on Pharmacy and Chemistry of the A.M.A.: New and Nonofficial Remedies for 1954, Philadelphia, J. B. Lippincott Co., 1954.

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Methylacrylic may be used for spinal stabilization and preservation of the intervertebral space after removal of herniated intervertebral disks. The material molded into the interspace cannot slip out of place and supports body weight without breaking or crumbling, reports Dr. David A. Cleveland of Marquette University, Milwaukee. The normal physiologic interspace is maintained and the intact neural canal remains free of bone and hypertrophic arthritic spurs. Movement is not restricted after the stabilization procedure, and exercise, including bending and lifting, is permitted postoperatively as soon as the patient desires.

Marquette M. Rev. 20:62-64, 1955.

Hormones for Hay Fever

Hydrocortisone alcohol aerosols or drops appear to ameliorate allergic tissue reaction of nasal membrane. Of 23 patients with hay fever treated with the hormone and vasoconstrictor solution, 4 obtained immediate but transient relief, 7 immediate and prolonged benefits, and 7 experienced long-term relief after extended periods of treatment, reports Dr. Charles S. Pennypacker of Bryn Mawr Hospital, Bryn Mawr, Pa. The preparation, Vasocort, contains a 0.02% solution of hydrocortisone alcohol with 0.125% phenylephrine and 0.5% hydroxyamphetamine. Approximately 0.2 cc. is applied locally by drops or nebulization to each nostril.

J. Allergy 25:513-520, 1954.

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Prompt, lasting relief of pain and itching: Anusol relieves anorectal discomfort almost immediately upon insertion. Action is soothing and decongestive. Relief is prolonged.

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Pyridoxine hydrochloride	2 mg.		

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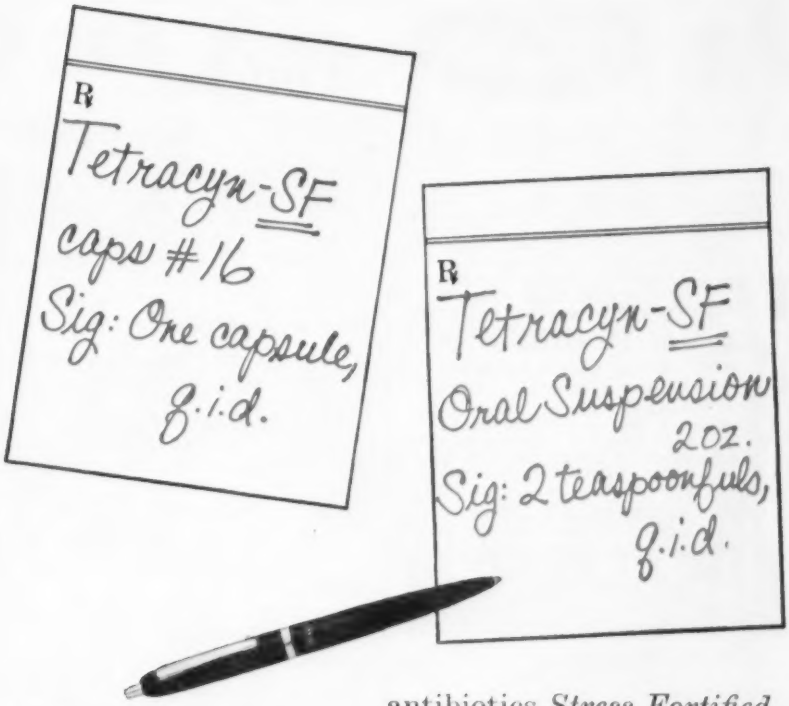

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"Why do you think you are getting worse?" I asked a patient at the hospital.

"When the nurse brought me some magazines, she told me not to start any serial stories," he answered.—S.L.

Dearth in Converse

"What do you find to talk about if you're never sick?" a patient asked.—D.N.

Lethal Error

"Why did you drink the poison?" I asked the child I was treating. "Couldn't you read the label?"

"Yes, but I didn't believe it," she answered, "because under 'poison' it said 'lye.'"—D.S.

"What do you say we invite Dr. Ross over for dinner, dear? I feel a cold coming on."


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Eiegy

A patient was bemoaning the disappearance of the good old-fashioned family doctor at great length when I asked, "Madam, do you know any good old-fashioned families?"—E.K.

Stiff Qualification Test

"You lost a good pharmacist," I said to the soda jerk while speaking of a former employee at the drugstore.

"Oh, I don't know," replied the boy. "I always thought he put too much pepper in the chicken salad."—B.P.S.

Wealth of Wisdom

"Why do you think you'd be happier with 6 children than with $6,000,000?" I asked a patient.

"The man with $6,000,000 always wants more," he replied.—L.L.B.

'Tis a Sad Loss

When I consoled a Scotchman on the loss of his wife, he replied, "And to think she hadn't time to take but half of the pills you prescribed."—L.L.B.

Considerate Compliment

I was treating the patient of a colleague who was ill. "If you're not better tomorrow, call me or your family doctor if he's better," I said.

"Oh, I think you're good, too," was the reply.—G.M.R.

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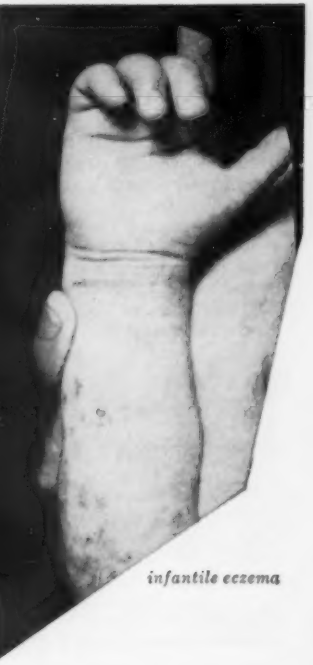
. . . including poison ivy and sunburn



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the prophylactic action* of SPECTROCIN—effective against many gram-positive and gram-negative organisms

*". . . secondary infection with pustulation often follow scratching which is induced by the intense itching." Nelson, W. E.: Textbook of Pediatrics, ed. 5, Philadelphia, W. B. Saunders Company, 1950, p. 1516.

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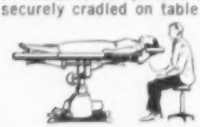

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